

The Opportunities Presented by the R.A.E.

2d

MOTOR CYCLING

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TUESDAY, 2ND JULY.
1918.

Registered at the G.P.O.
as a Newspaper.

FOR THE SERVICES



MAGDALEN COLLEGE, OXFORD.

BEFORE the war, the Douglas was the sportsman's favourite motorcycle. Sterner duties are depriving them of their pleasures at present, but hundreds of sportsmen are looking forward to the return of happy motor-cycling days on a Douglas. They know the wonderful work the Douglas is doing now at the front, and as a result of war experience, their favourite machine will be even more efficient, more speedy and more reliable after the war.

May we send you a copy of our 1918 Catalogue?

DOUGLAS MOTORS, LTD.,
KINGSWOOD, BRISTOL,
39, Newman St., London, W.1.

Douglas

BRITISH MAGNETOS

LL IGNITION &
STARTING SETS

COMPANY LTD
204 TOTTENHAM COURT
ROAD, LONDON, W.1.

"What's
Coming
Along?"

ONE of the really good things "coming along" is the post-war N.U.T. We are too busy on Government Work to execute orders yet, but those who place their names on the Waiting List NOW will have priority when orders CAN be filled.

Details of the special post-war Model, which will be sent post free on application, will prove that the new N.U.T. is distinctly a machine worth waiting for.—Drop us a postcard.

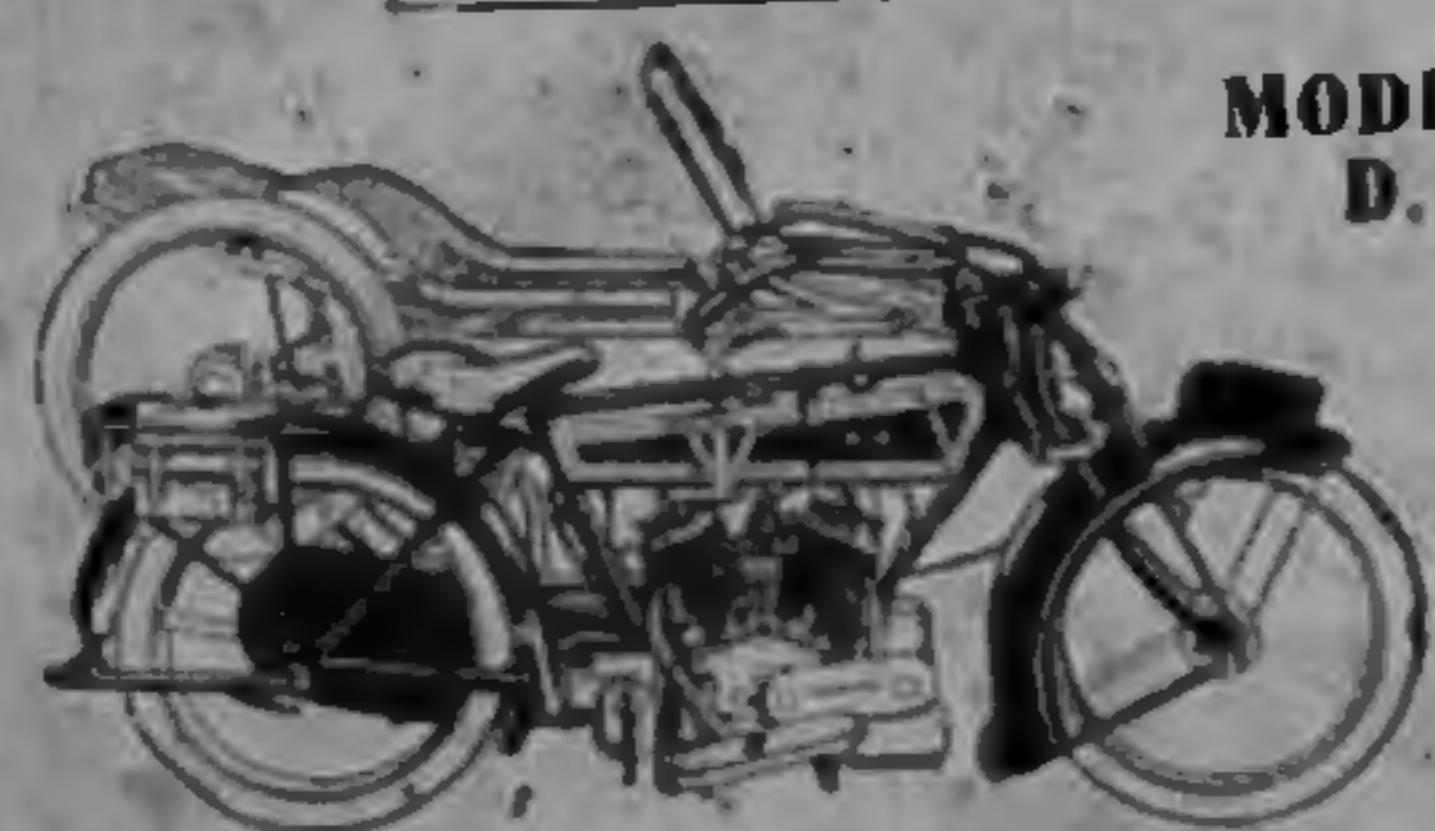
The Newcastle-upon-Tyne Motor Co., Ltd.,
South Benwell — Newcastle-upon-Tyne

N.U.T.
NEWCASTLE — UPON — TYNE

A.J.S.



MODEL
D.



PRE-EMINENT POINTS

ACCESSIBILITY.

That important consideration, "the value of time" to the rider, has influenced our A.J.S. experts to successfully design the most quickly accessible motorcycle that's made—as note one instance, its Interchangeable Detachable Wheels, which can be separately detached, interchanged, or replaced with spare, without making any adjustment—IN A FEW SECONDS.

Owing to our being fully engaged on supplying Government requirements, we regret our inability to accept orders for delivery at present, but suggest that you place your name on our "Waiting List" for our earliest possible attention.

A. J. STEVENS & CO. (1914), Ltd.,
GRAISELEY HOUSE, WOLVERHAMPTON.

London Agents—H. TAYLOR & CO., Ltd., Store St., Tottenham Court Rd



On leave and—his **CLYNO**

And that man will demand a CLYNO after the war—so will he who experienced its merits in the pre-war days—so will he who knows its pre-war history and active service records—

And that means a huge demand, therefore, in the manufacture of the 8 h.p. POST WAR CLYNO we have decided on a policy embodying the following features—

1. Mass production of one model (to increase output and reduce productive cost).
2. Prices for both Outfit and Spares competitive with any combination of equal reputation.
3. Rotational delivery (to insure to those who order now delivery within a specified period of the ending of the war).

You're interested?—then get in touch with the nearest CLYNO Agent—he'll tell you more about it.

THE CLYNO ENGINEERING CO.
Clyno Works, WOLVERHAMPTON.

BROOKS

Queries—No. 3.

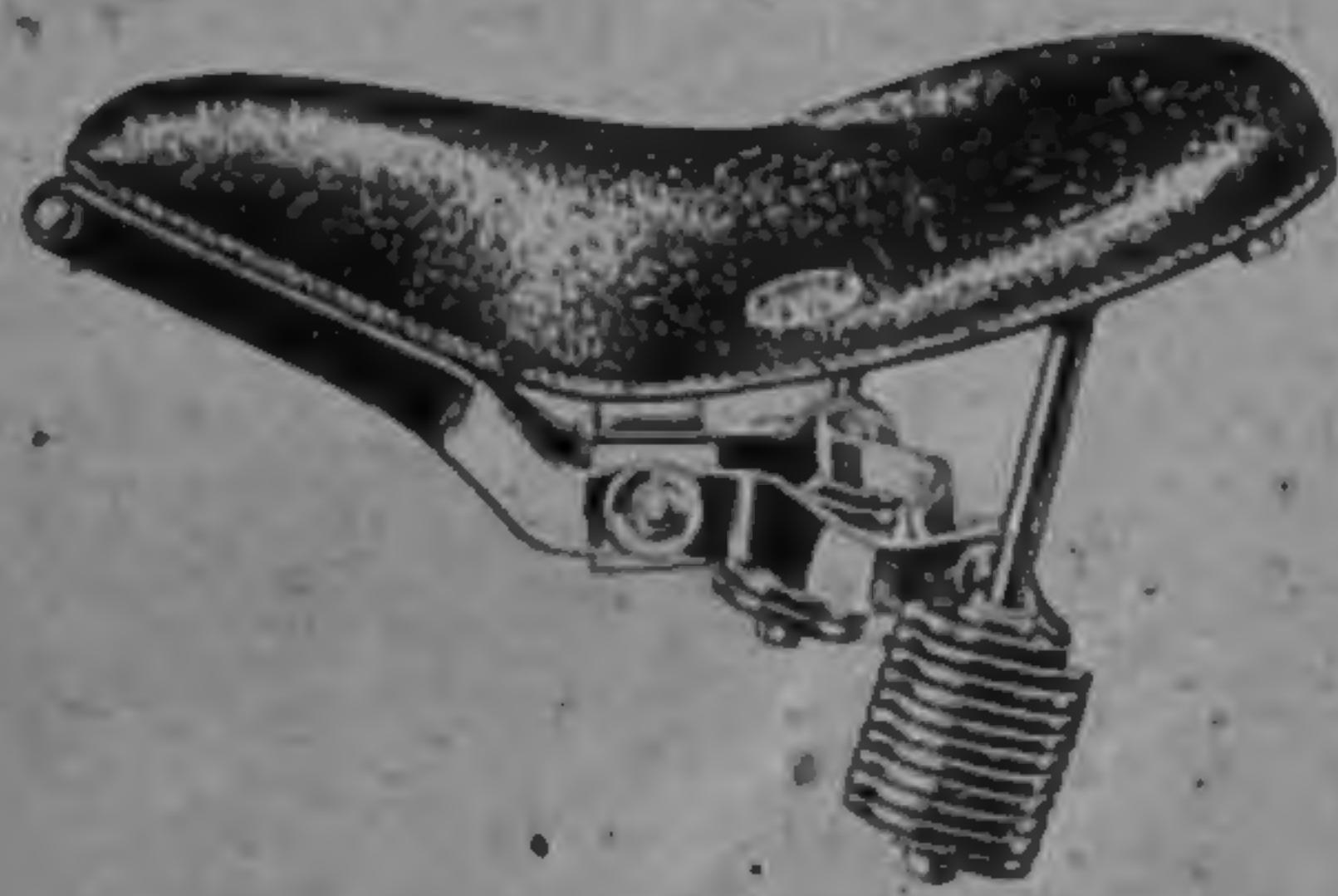
When the shock came did you "bounce"?

If so, it is certain that the springing of your saddle lacks that compensating action which is an absolute essential to your health and comfort.

And with the BROOKS, the compound springs, each acting as a check upon the other, supply that need, absorb vibration as no other springing system can, yet modify the recoil most effectively.

And that is yet another reason why you should never choose the substitute.

J. B. BROOKS & Co., Ltd.,
77, Criterion Works,
BIRMINGHAM.



THE BROOKS B170.
The saddle with the compound springs.

SPHINX



Scenes the Sphinx has looked upon.

No. 4,
THE BUILDER OF THE TEMPLE.

Thousands of years ago he lived and died, but his work remains. He builded perhaps better than he knew.

To-day Sphinx Plugs are made with a not dissimilar aim—to endure. Known as "England's Most Durable Plugs," they are universally recognised as the standard of efficiency and strength.

At present they are required for the use of the Allied Armies and for work of National Importance. When peace returns they will be available once more in their supreme efficiency for the new era which will demand none other than the best that Britain can produce.

THE
SPHINX MANUFACTURING
COMPANY,
BIRMINGHAM.



HARLEY-DAVIDSON ANTICIPATIONS.

A SPIN on a glorious July day—the country looking its best, and a machine typical of the poetry of motion.

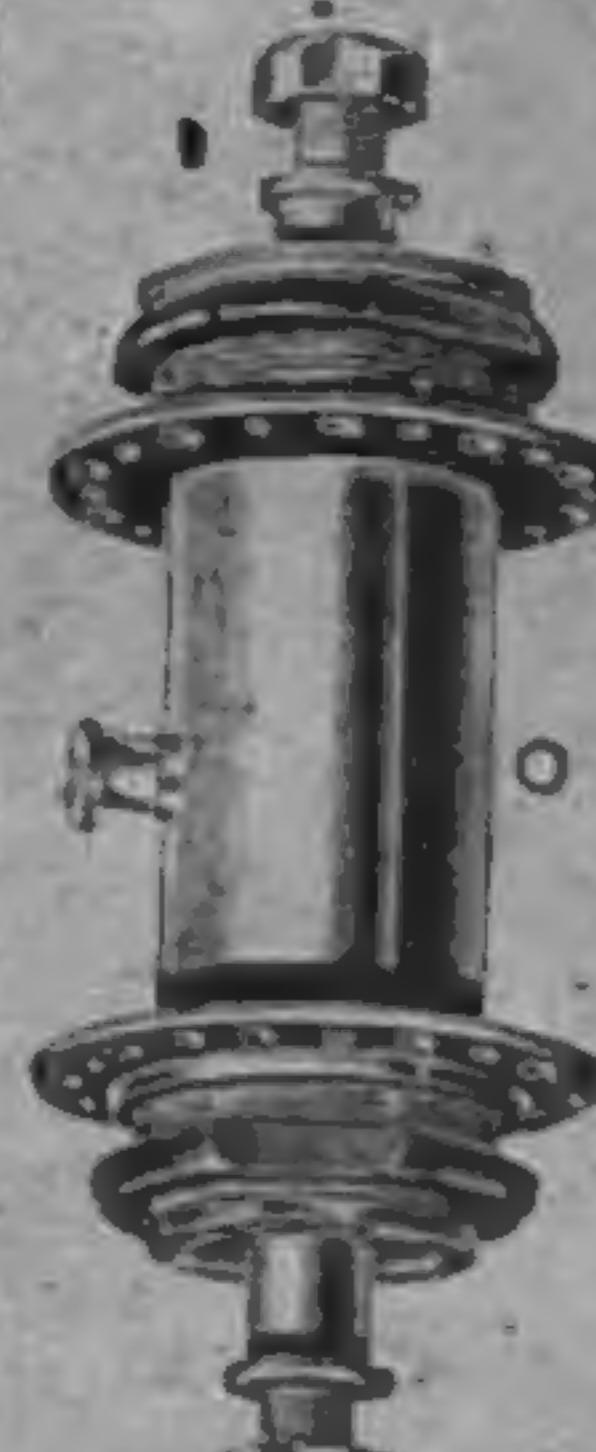


74, Newman Street, London, W.1.

CHATER LEA

The Reputation of the House
of Chater Lea is built upon
the Productions of that House.

27 years of cycle and motorcycle
experience, plus 4 years of exacting
war work, is a guarantee that the
post-war productions of Chater Lea
will be absolutely the finest extant.

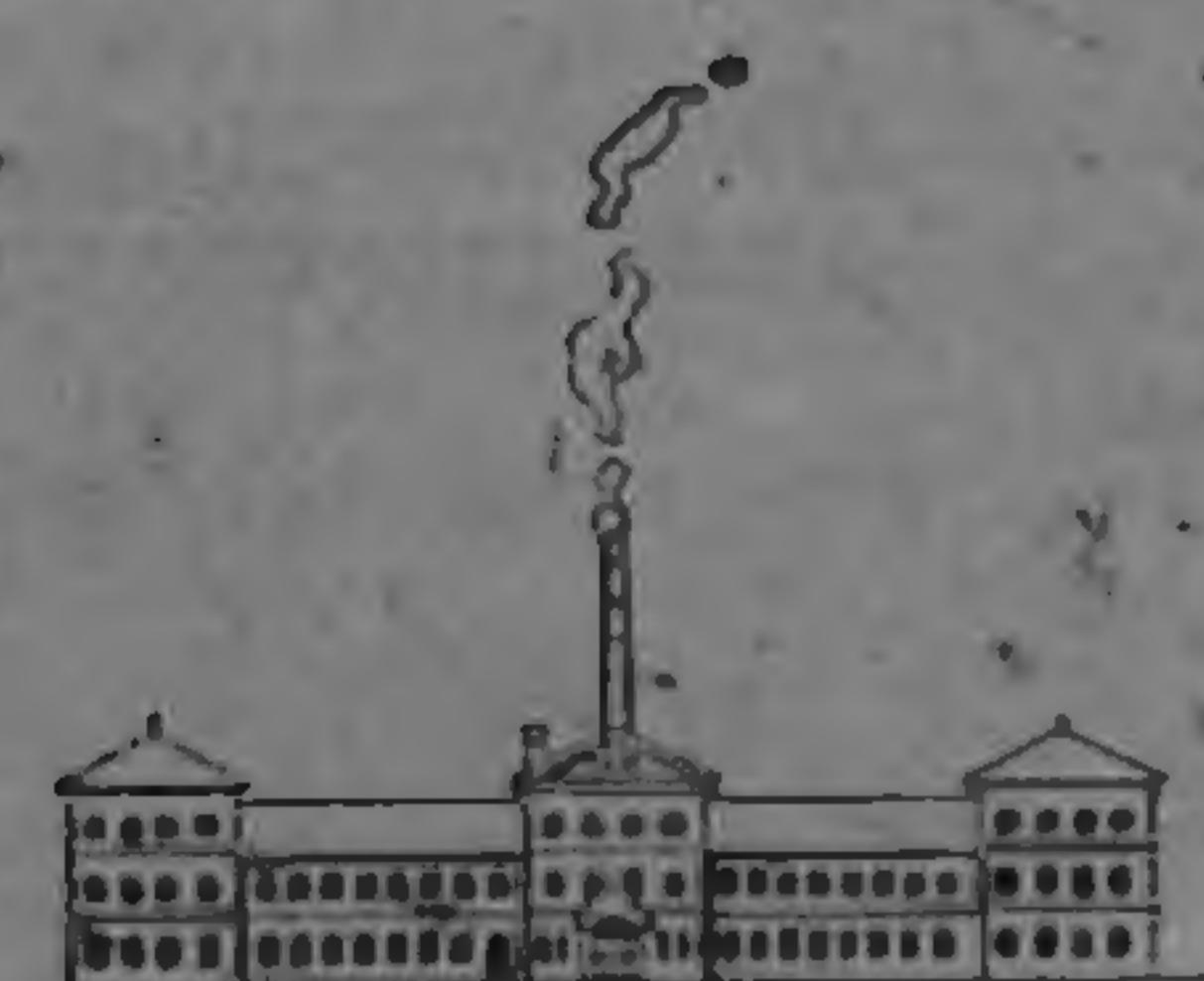


CHATER LEA, Ltd., BANNER STREET and
GARRET ST., LONDON.

DO NOT FORGET TO MENTION "MOTOR CYCLING."



ORIGIN
OF THE
B.S.A.
COMPANY



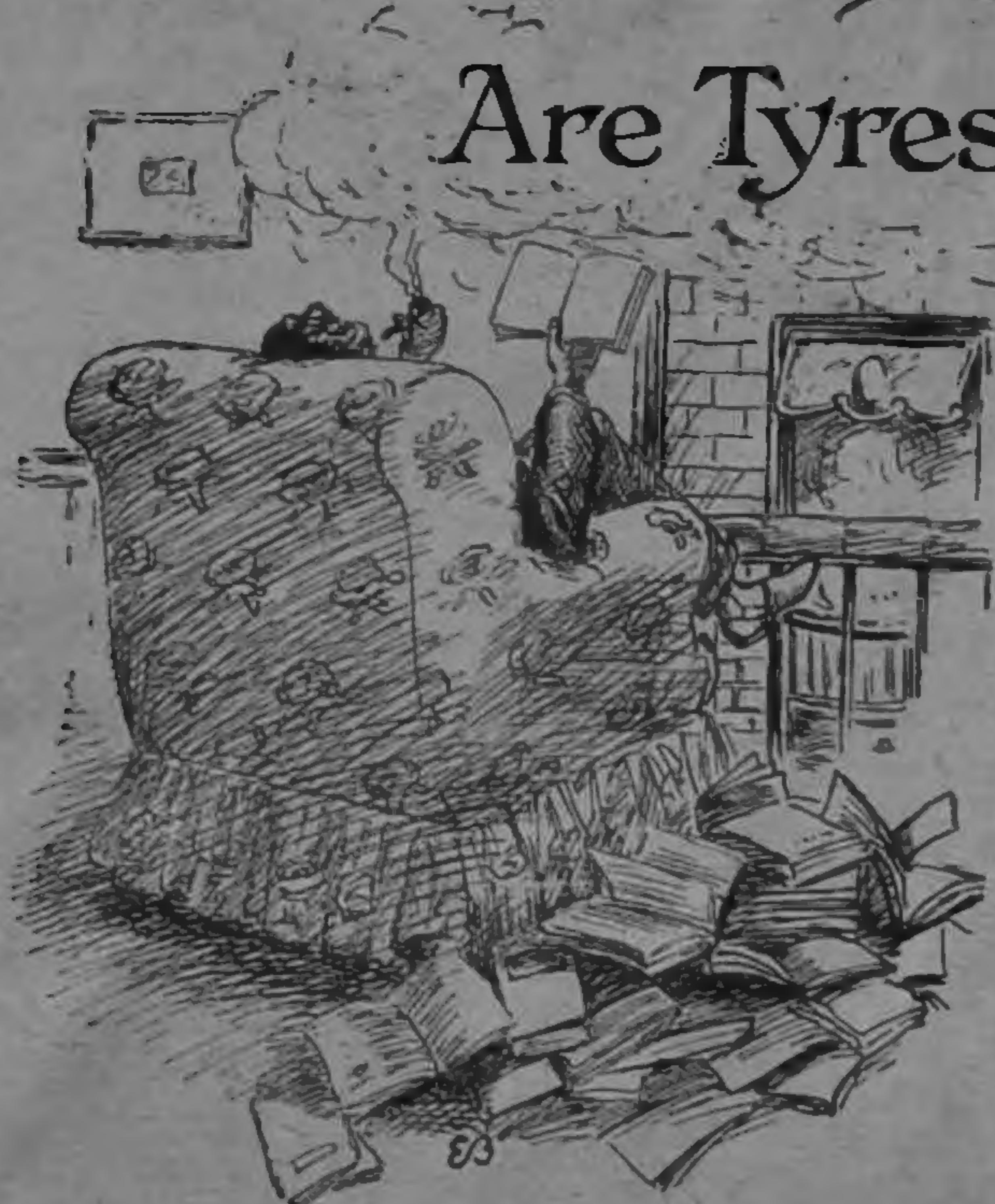
Original B.S.A. Factory, 1851

IT is an interesting fact that it was owing to a shortage of munitions during the Crimean War that The Birmingham Small Arms Company had its origin. The Government of that day found it necessary to call on 16 firms of Birmingham gun-makers to furnish a supply of arms, and from this beginning originated the great B.S.A. Factories which have, on more than one occasion, proved of National importance.

Though over 60 years have passed since the time of the muzzle-loader—entirely hand-made, and typically British in the excellence of its workmanship and material—B.S.A. productions have unceasingly maintained the same high standard of quality. To-day B.S.A. Bicycles and Motor Bicycles, by their reliable service under the severe test of modern warfare, are still upholding the great B.S.A. traditions.

THE BIRMINGHAM SMALL ARMS COMPANY LIMITED.
BIRMINGHAM.

Are Tyres Elastic Bands?



PERPLEXITIES OF MODERN CATALOGUES.

A FRIEND of mine used to sit beside his wife for hours at a time with her little hands firmly clasped in his; it wasn't love, it was precaution. Now, if someone does not hold my little hands there's likely to be trouble—it's either that or one of these days I'll be found sitting on the pavement drawing circles, or, probably, working out sums on somebody's door. Let me try to explain why, and, should my tale be a bit disjointed, give me your sympathy.

I have been trinuning up the old bus; I hope by the judicious use of a little paint and powder to bring back the signs of youth, and then do a little profiteering. I have just finished the wheels; they have been carefully scraped and enamelled, and now look fine.

My next job was the tyres. I knew I should have to lay out some money in that direction, and as I am neither a munition maker nor a brewer I thought it advisable to collect a few tyro makers' lists, and follow the plan of most motorcycle manufacturers by fitting the cheapest tyres I could get. You see, I do not expect to ride the bus again, and when the unfortunate buyer gets trouble with his tyres and complains to me I will simply write and say that I am not responsible for components I do not manufacture, and leave the poor chap to scrap it out with the tyre makers. A mean way of doing things, no doubt; but there, I'm out for profit.

Well, I got these lists and sat down in my armchair to study them. Then the trouble began.

Mother surprised the children by ordering them off to bed; then she remembered that a neighbour wanted to see her about something—she took the dog with her.

Freedom of speech is a fine thing.

I had made up my mind to fit big covers. I could then draw my victim's attention to them and expatiante on the comfort of such things, incidentally dropping a few words about mileage cost as against buying cost, false economy, etc. By-the-by, I have come to the conclusion that economy is a way of spending money without getting any fun out of it. The

rims on my bus are 650-65, and I had in mind 700 by 80 tyres. The first list I picked up offered a very fine (according to the picture) cover of that size, and then calmly stated that it fitted American rims.

Now I have the impression that American rims are either 28 by 3 or 28 by 2½. I must have got things wrong, although when 700 mm. is reduced to figures we can understand, it works out at 28 ins., so the book seems to be right after all. I tried another list. It stated clearly 700-80 covers to fit 650 by 65 rims. Now, that is the size I want; but I did not like the picture, and, anyhow, I began to have a doubt about the information. If 700 mm. is 28 ins., how can it fit a 650 mm. (or, plainly 26 in.) rim? Something must have slipped.

I tried another. The chap who compiled this one tangled things up a bit more. He backed up the last fellow, and said 700 by 80 fitted 650 by 65, then proceeded to tell me that his 750 by 75 fitted 700 by 65, 750 by 70 or 28 by 3 rims. He must have been talking about elastic bands.

Before going further I went back to my first list, where I had seen a lot of drawings showing the shape of various rims, all guaranteed standard and true to life. I found there that the normal size of tyres which can be fitted to 650 by 65 rims included 700 by 80 (official), also that 700 by 65 and 750 by 80 fit the 700 by 65 rim (official again). There you have two covers, both masquerading as 700 mm., yet one is for a nominal 26 in. rim and the other for a 28 in. As for a 750 by 70 rim, the official guide doesn't seem to know anything about it.

Then I found another note—"Millimetre sizes will not fit inch rims," and yet the third list talked about 750 by 75 covers to fit 28 by 3 rims. The person who compiled that list must have been manufacturing evidence to prove that he was unfit for the Army.

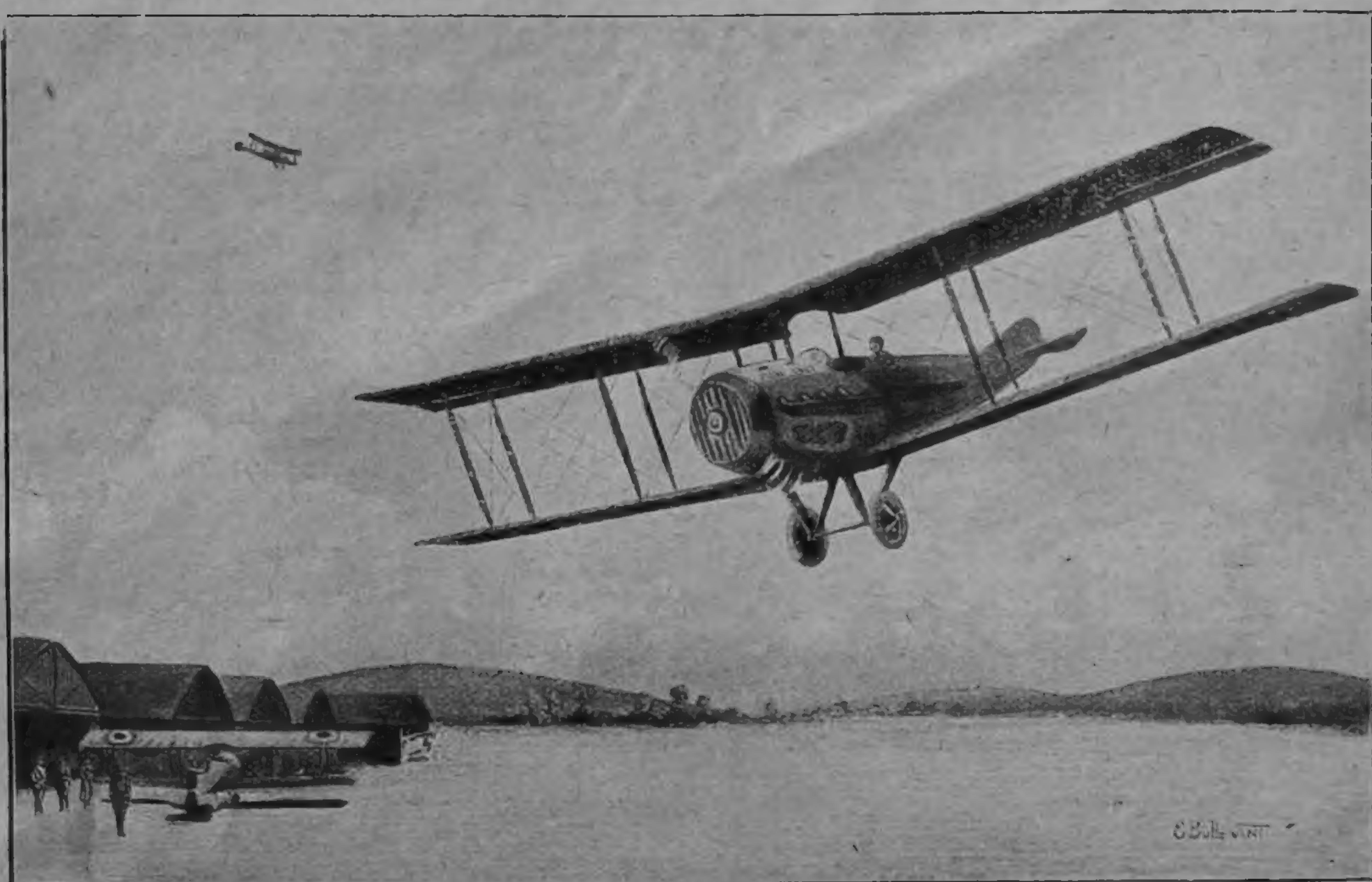
Now, let's see; where do I stand? Things are beginning to buzz round a bit and are taking all sorts of shapes.

I looked up a few more lists—and got a headache—but it seemed on putting the point to the vote that the 700 by 80 cover, which in English is 28 ins. by 3½ ins., fits the 650 by 65, or, translated, 26 ins. by 2½ ins.—no, that won't do, because I see that the official rim under the name of 26 ins. by 2½ ins. has a smaller bead clinch. Anyhow, the first part is agreed on, viz.: 700 fits 650, although why it should I don't profess to know.

Now, I appeal to my readers, can anyone tell me why there should be so much muddle in the naming of tyres for the 650 by 65 rim? I have gone over every cycle tyre list and find that, no matter what the sectional measurement is, the diameter figure is constant; for instance, you get 26 ins. by 1½ ins., 26 ins. by 1¾ ins., 26 ins. by 1½ ins., 26 ins. by 1¾ ins., and so on. Also in motorcycle tyres for 26 in. rims things are all plain sailing; there you get 26 ins. by 2 ins., 26 ins. by 2½ ins., etc., but that 650 chap is the limit!

Why can we not have something anyone can understand, such as 650 by 65, 650 by 70, 650 by 75 and 650 by 80? Let the first measurement in all cases be the same as the rim, as is the case in cycle tyres. We should then know what to do, but who can be expected to keep in mind all the little dodges the tyre makers get up to, in their endeavour to hoodwink the public into the belief that they are getting an extra big cover for their money?

ONLY A BUYER.

AIR ARTS AND CRAFTS. — AVIATION NOTES ::
FOR MOTORCYCLISTS

"And was it not the most pleasant and surprising part of the whole business, that quiet, long glide?"

CONCERNING FIRST SOLOS.

THE first solo flight made by a prospective aviator is undoubtedly an event in his career, although not altogether for the reasons one might be led to expect. It is commonly thought that the Clerk of the Weather, with his attendant sprite, the Chief Superintendent of Bumps and Air Pockets, lies in ambush at the very mention of a "First Solo," and proceed to give the hapless youth the time of his brief but eventful existence.

The truth is that it falls to the lot of few pilots to obtain more than a passing glimpse of the more exciting sensations of flying. On school machines fitted with rotary engines, first soloists commonly "lose their props"; in other words, glide too slowly to keep the propeller and engine turning over sufficiently to ensure of the latter picking up when the petrol is again turned on. This mishap usually entails a forced landing, but as it invariably happens within gliding distance of the 'drome, the whole thing cannot be called a thrilling experience; that is, always supposing that the pilots in question are normally clear-headed and have received sufficient instruction to enable them to make a landing without having recourse to their engines.

The most trifling experiences take on an enormous significance when the pilot is sent up alone with insufficient instruction. When a First Solo comes down and describes what he sincerely believes to be hair-breadth escapes, and you have seen him with your own eyes make a perfectly uneventful circuit of the 'drome and finish up with a rather doubtful "mighty-lucky-to-get-down-without-a-breakage" landing, you know that he does not really know how to fly; and that, even if he did not let his propeller torque swing

the 'plane round and make the turns for him, he probably lost height on every turn and thought in his ignorance (an ignorance not infrequently the fault of other people) that he was side-slipping into eternity. To which, if moral there be, it is this: No one can have too much dual flying.

Allowing pilots to learn for themselves what a treacherous element the air can be instead of letting an instructor give them the benefit of his experience in what are really nerve-racking or "windy" moments, is the main reason why such a large percentage of beginners in flying find it too much for their nerves.

Given decent luck, and sometimes even without it, the average pilot feels as "bucked" as he ever will feel after his first solo flight. He reviews all he has done and all the pleasant surprises he has received and finds the memory very rosy. Had he not felt that he could fly the bus to Hades? But as for gliding into the 'drome over the hangars and landing it—well! And was it not the most pleasant and surprising part of the whole business, that quiet, long glide and the elastic bounce on the springy turf? And that "taxy" in to E Flight, with the knot of P.F.O.s waiting with congratulations in the distance, and meanwhile a "gingery" engine, which can trail the bus over the ground at 3 or 4 knots or race it along tail up at 30! At such a moment, do you dream that your friends and relatives, to say nothing of a certain fair maiden, are amongst the little crowd by the Flight Office? I guess so! Or perhaps you would prefer the afore-mentioned fair maiden to look round at you from the front seat with admiration shining through her goggles. Some life! But, alas! 'tis not to be, and two stalwart ratings grip your wing tips and guide you to your place in the ranks of waiting machines.

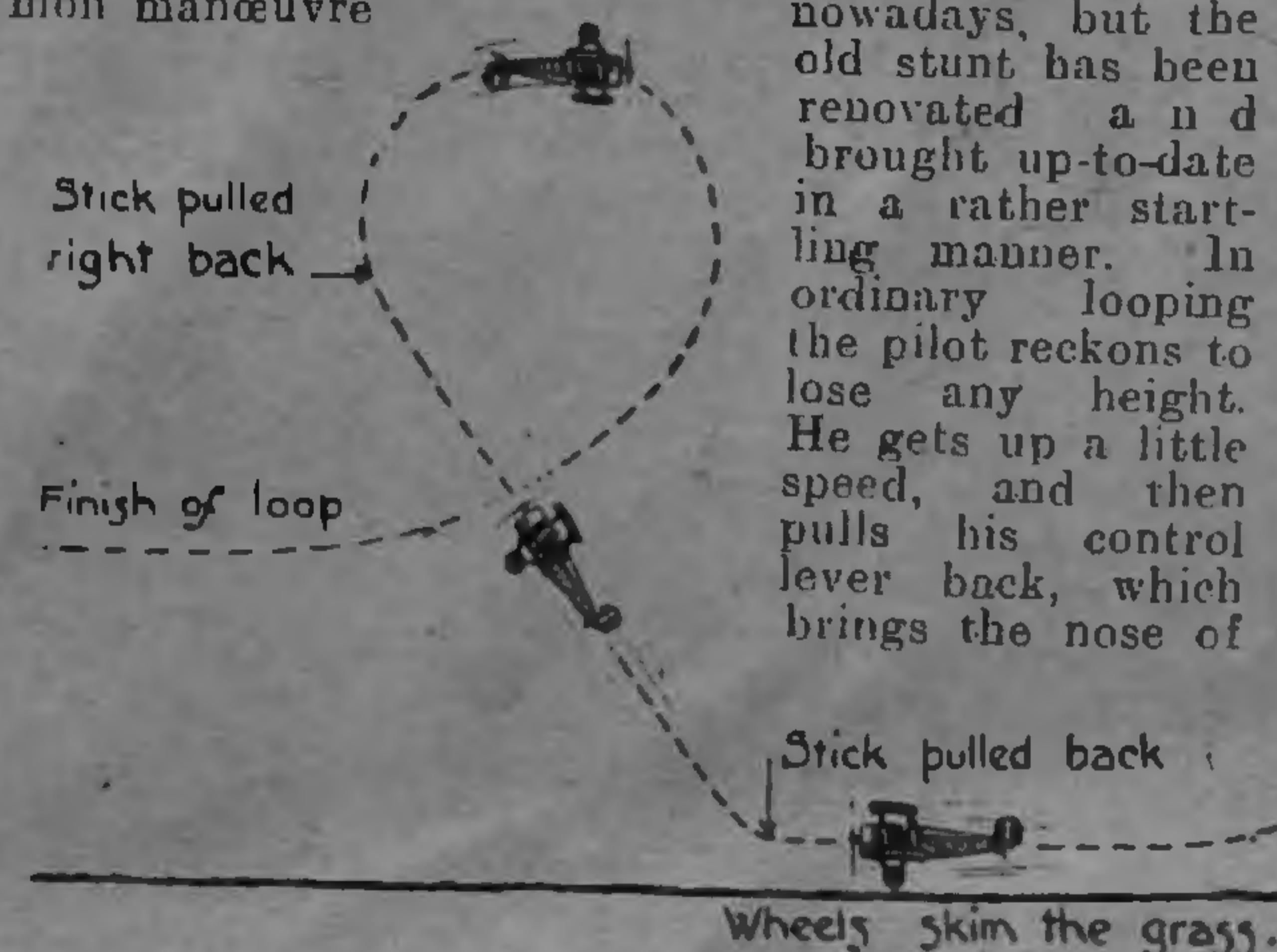
Air Arts and Crafts (contd.).

One man I know learned to fly in France and had the ill-luck to wander too far and get lost on his first solo. He landed all right and got rather well looked after by some French officers at an anti-aircraft station. After some trouble (for my friend's supply of French was practically nil), they found out that he was a first soloist. "Ah, oui," said one of them, "c'est ravissant, n'est ce pas, magnifique?" beaming over with amiability. "Non, non!" protested my friend. "Comment? Pas ravissant, pas magnifique?" "Non, non! Très bon—très bon!" replied my friend, and did not know why they smiled. Anyway, they did him very well, and I got this yarn from them when I contrived to get lost there myself a few days later.

REVS.

SOME SUPER-STUNTS.

Looping the
mon manœuvre

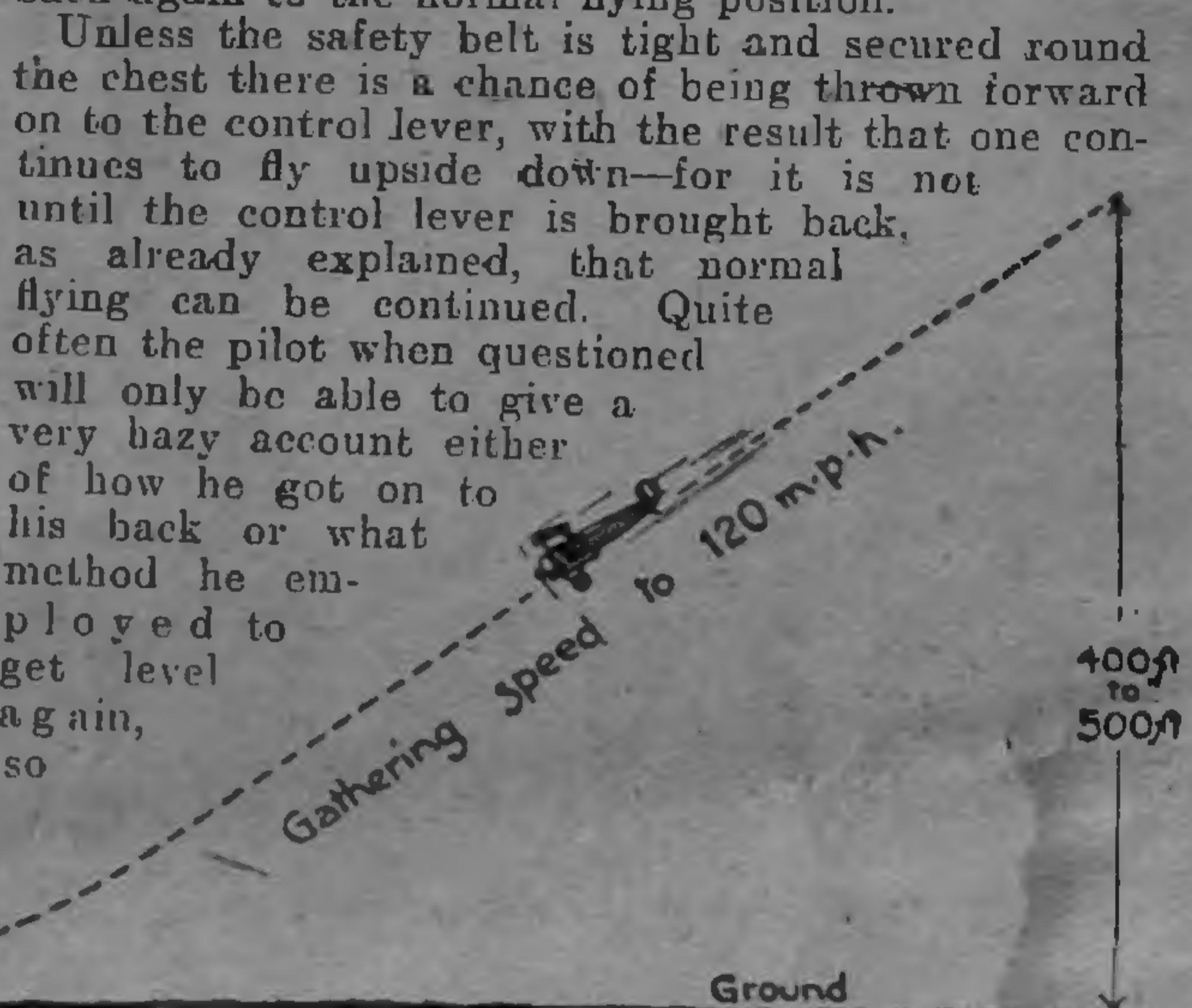


loop is quite a common nowadays, but the old stunt has been renovated and brought up-to-date in a rather startling manner. In ordinary looping the pilot reckons to lose any height. He gets up a little speed, and then pulls his control lever back, which brings the nose of

pilots have flown for quite long periods in the upside down position. As their petrol tanks are pressure fed, there is no leakage of fuel or any reason why the engine, provided that it be of the rotary type without float chamber to the carburettor, should even stop running.

In order to prevent the pilot from falling out, shoulder straps are sometimes used in addition to the ordinary safety belt. These straps secure him to the machine and fasten over the shoulders. Sometimes inexperienced pilots who are practising some kind of manœuvre suddenly find themselves on their backs, hanging by their safety belt. The sensation is an unpleasant one, as it takes what seems an eternity to discover exactly where one is and to get back again to the normal flying position.

Unless the safety belt is tight and secured round the chest there is a chance of being thrown forward on to the control lever, with the result that one continues to fly upside down—for it is not until the control lever is brought back, as already explained, that normal flying can be continued. Quite often the pilot when questioned will only be able to give a very hazy account either of how he got on to his back or what method he employed to get level again, so



A new variation of looping the loop.

the machine up so that the machine is practically standing on its tail, and is travelling upwards with an appreciable weight on. By pulling the control lever still further back the nose of the machine is pulled right over backwards, so that it is now pointing to the ground. If the control is held back for a second or two longer the machine will flatten out correctly, and the loop will be completed.

In looping off the ground, which can only be done on light machines with a goodly surplus of engine power, the pilot swoops down at a speed of 120 or 130 miles per hour with his engine full on. His wheels skim the grass, and he then pulls his control lever back and executes a huge zoom, or upward leap into the air. He may climb 500 ft. owing to his great initial speed. At, or nearly at, the top of the zoom he pulls the control lever still further back on to his chest, and the machine gets on to its back: the nose drops, and the machine is flying level again.

Flying upside down can be practised from a loop, and is performed by some very experienced pilots with perfect security and full control of their machines. When they are upside down in a loop or on their back, as it is called, they merely push the control lever forward and throttle down their engines. The difference is that in the full loop the control lever is kept fully back to allow the machine to come out of the loop and flatten out somewhat, whereas in upside down flying the control is pushed forward on the top of the loop. To get out of the upside down position the pilot pulls the control lever back again on to his chest, the nose of the machine drops and he comes out as if he were completing a loop. Some

quickly does everything happen in the air. A cool head is essential to the flying man.

GNOME.

ALL THE DIFFERENCE.

"THE MOTOR" told a good story last week of two inmates of a lunatic asylum, whose mental trouble took the form of a great pre-occupation with aeroplane inventions. They met in the grounds one day and compared notes, one of them explaining that he had invented an aeroplane which would fly under the ground. The second patient gazed at his fellow "innocent" with intense pity for some moments. Then, in tones of contempt, he exclaimed: "You're not a lunatic, you're a bally fool!"

MOTORCYCLISTS MAKE GOOD AVIATORS.

SOME aviators deny that motor cycling is the best training for flying, arguing that horse riding and athletics give better results. It is interesting, in view of the controversy, to read the following in an American paper:—"There is not much similarity in a motorcycle and an aeroplane, but a review of the names of our famous American aviators reveal many that gained their first motor experience with motorcycles. A motocyclist necessarily acquires a keen sense of balance which in aviation is a prime requisite, so that motor cycling is the best of preliminary training for flying."

Contributions dealing with aviation subjects are invited for these pages. They should be addressed to the Editor, MOTOR CYCLING, 7-15, Rosebery Avenue, London, E.C.1.

Episodes of the Services.

ONE JANUARY NIGHT.

An Experience of a Home Service Despatch Rider.



" I was still plodding along, longing for a third wheel, but woefully troubled with snow flakes beating into my eyes."

HERE is many a true word spoken in jest. I was wishing the boys "Good-night!" and they were laughingly suggesting urgent despatches for almost every unit and depot within a 20-mile radius of our headquarters. The reason for their kind suggestions was the state of the weather, which was bitterly cold and snowing hard, with that sort of snow, driven before the wind, that seems to find all the weak spots, and, on account of beating into the eyes and face, makes progress next to impossible.

With a final "Good-night!" and an extra tightening of my muffler, I started for my billet, with visions of an hour or so by the fireside. I had had a very good share of snow and mud plugging since commencing my duties in the morning. One can get enough of this and long for a powerful 7-9 h.p. mount instead of the bonnie little $2\frac{3}{4}$ h.p.

In a few minutes after leaving H.Q. an orderly caught me up and informed me that the G.S.O. wanted me at once.

"Were you asking for me, sir?" I queried when I paraded before him.

"Yes, corporal; I'm afraid you are going to have a very busy night. There are urgent messages to go to _____, _____ and _____" (mentioning all the places enumerated a few minutes before by the boys). "You have had tea, of course?"

"No, sir; I was just going to have it when you asked for me."

"Then I'm afraid you'll have to forgo it to-night."

"Very good, sir." And off I went to acquaint my fellow D.R. with the cheerful (?) news.

A few minutes later we were "all over" our machines, and although I had tested my rear lamp but an hour previously it now refused to light. Inspection revealed the fact that someone had apparently turned on the water and the carbide was sodden. This was soon remedied.

What worried me more was that, riding during the

morning, I had noticed once or twice a peculiar misfire and now I began to wonder if it was going to develop.

"Wish they'd give us sidecar chassis to fit to our buses this weather," was the wish expressed by my companion and heartily endorsed by myself. We shared our matches, and in about five minutes from the warning we were off on our respective journeys, after slipping and skidding all over the road on account of our inability to get a decent foothold in the snow.

At my first call, after about 15 minutes riding, I managed to get some tea and cake, and was then off again into the snow. The few pedestrians who were out all seemed to think the roadway safer than the pavements, and many a shock did I get during the next few miles through some particularly obstinate specimen of deaf humanity. The traffic also was troublesome. My mind was running on, generally "cussing," but with an undercurrent of pride in, and thankfulness to, the boys "out there" who were probably getting much worse conditions than were my lot. More than once I thought of the petrol restrictions and wondered what my reply would be if I were stopped and asked if I were riding for pleasure!

However, I was still plodding along, longing for a third wheel, but woefully troubled with the snow flakes beating into my eyes. Goggles? Oh, yes, I had these, but the dark night and the snow flakes combined made it impossible to see at all with them on, and I preferred the discomfort of riding without to an untimely end.

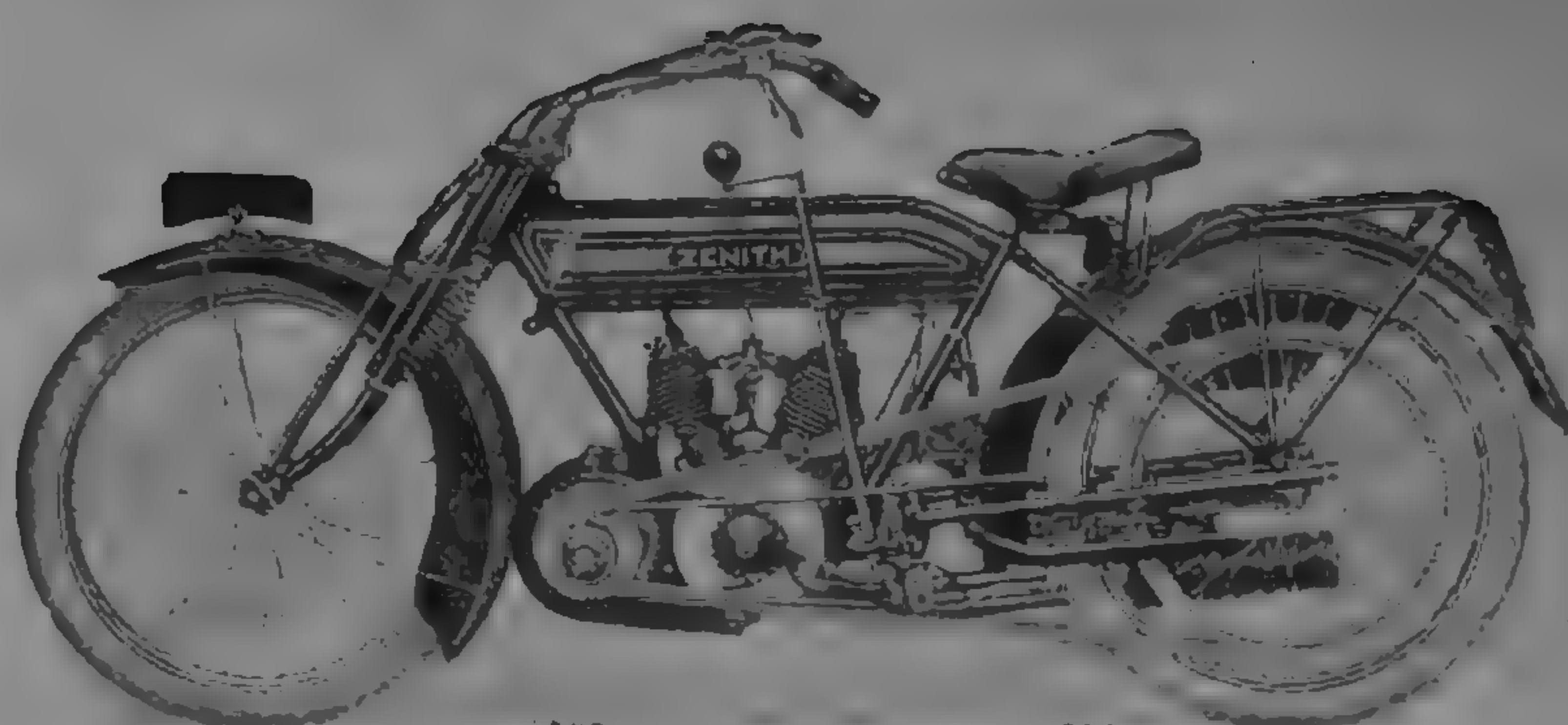
Going got much harder now, and that confounded misfire had started once more. I could not make it out at all. Gee! That's done it!! I must have caught my front wheel in a hidden tramline and had a real beauty of a skid. Examination revealed a bent footrest and the headlamp glass cracked. Of course, the lamp went out. By this time I was pretty wet and so were my matches. At last I found one or two

2nd July, 1918.

MOTOR CYCLING

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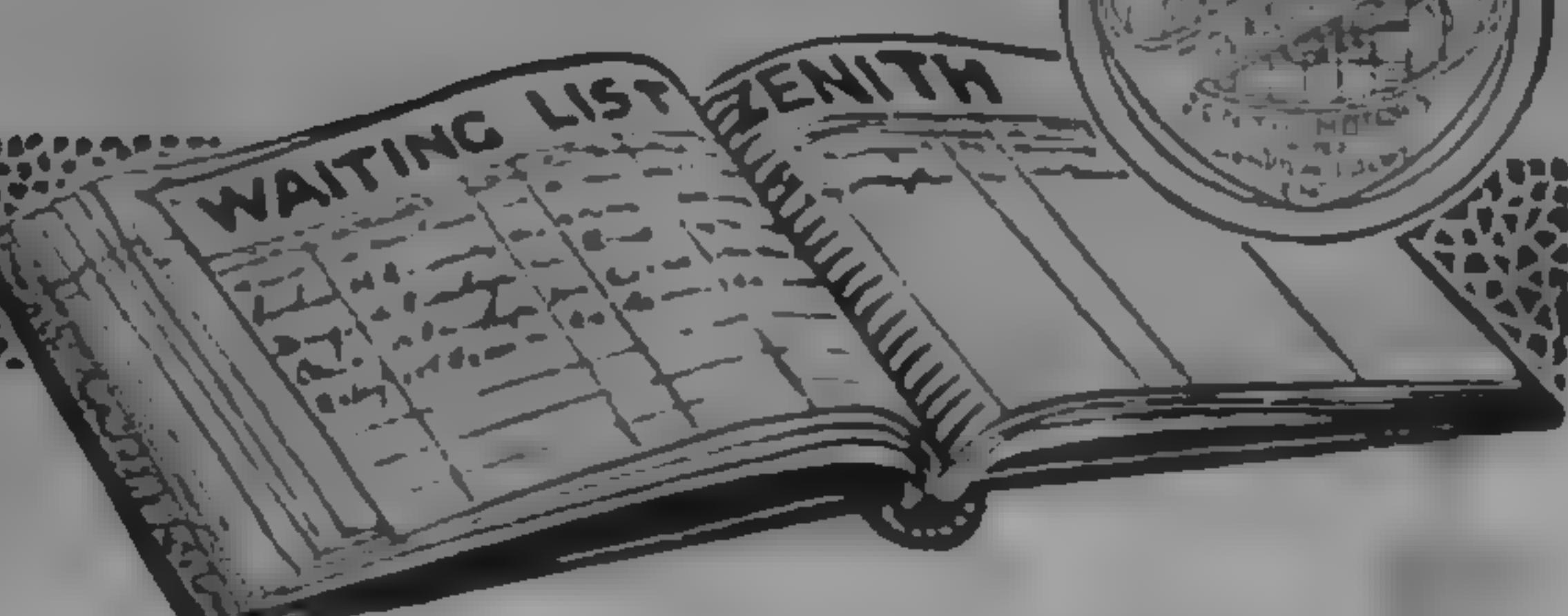
IT IS NO SECRET that after the war, the demand for ZENITH Motorcycles will be enormous, both for business purposes and pleasure. In the early days of the war they distinguished themselves by their reliability for speed, strength and power under the most trying conditions. Daily we are receiving names from motor-cyclists who intend to possess a ZENITH when normal conditions return. You should send your name along also if you are thinking of getting a ZENITH. It will give us pleasure to send you our catalogue, or to answer any enquiries.



The ZENITH "Clutch and Countershaft" type, with Kick Starter, Positive Locking Clutch, longest Belt Drive, and the Infinitely Variable Gradua Gear.

ZENITH

THE HALL MARK
OF EFFICIENCY.



ZENITH MOTORS, LIMITED,
Hampton Court, ENGLAND.



Illustrated Catalogue
post free from the makers:
**THE LODGE SPARKING
PLUG CO., LTD., RUGBY.**
(Controlled Establishment.)

LODGE

PLUGS
RESERVED
AT
PRESENT
FOR WORK
OF URGENT
NATIONAL
IMPORTANCE

KINDLY MENTION "MOTOR CYCLING" WHEN CORRESPONDING WITH ADVERTISERS.

211

LOOK AFTER
 "No. 1"
 Your safety Your comfort Your pocket
 are all catered for in the British - built



It is the Safest Tyre on the Market, and the finest for hard work under all conditions. The non-skid tread affords complete protection; its thickness gives a high degree of comfort, while its ability to stand up to the roughest of roads represents true tyre economy.

Riders should lose no time in sending for our New List.

W. & A. BATES, Ltd., St. Mary's Mills, LEICESTER.

COLONIAL WHOLESALE STOCKHOLDERS:

SOUTH AFRICA — Smith, Denham & Co., Von Brandis Street, Johannesburg.

BRITISH EAST AFRICA — Childs & Joseph, Nairobi.

AUSTRALIA — A. G. Healing & Co., 354, Post Office Place West, Melbourne; Bennett & Barkell, 124-132, Castlereagh St., Sydney; Cornell & Son, 122, Pirie St., and 29, Hyde St., Adelaide, S.A.; A. E. Beal, Edward Street, Brisbane.

Depots at — LONDON : 28, St. John's Square, Clerkenwell Road. **GLASGOW** : 24, Carlton Place. **NEWCASTLE** : 28, Clayton Street West. **BELFAST** : 17-19, Waring Street. **BRISTOL** : 63, Victoria Street.

COLONIAL WHOLESALE STOCKHOLDERS:

NEW ZEALAND — Cycle & Motor Supplies, Ltd., Farish Street, Wellington, and at Christchurch.

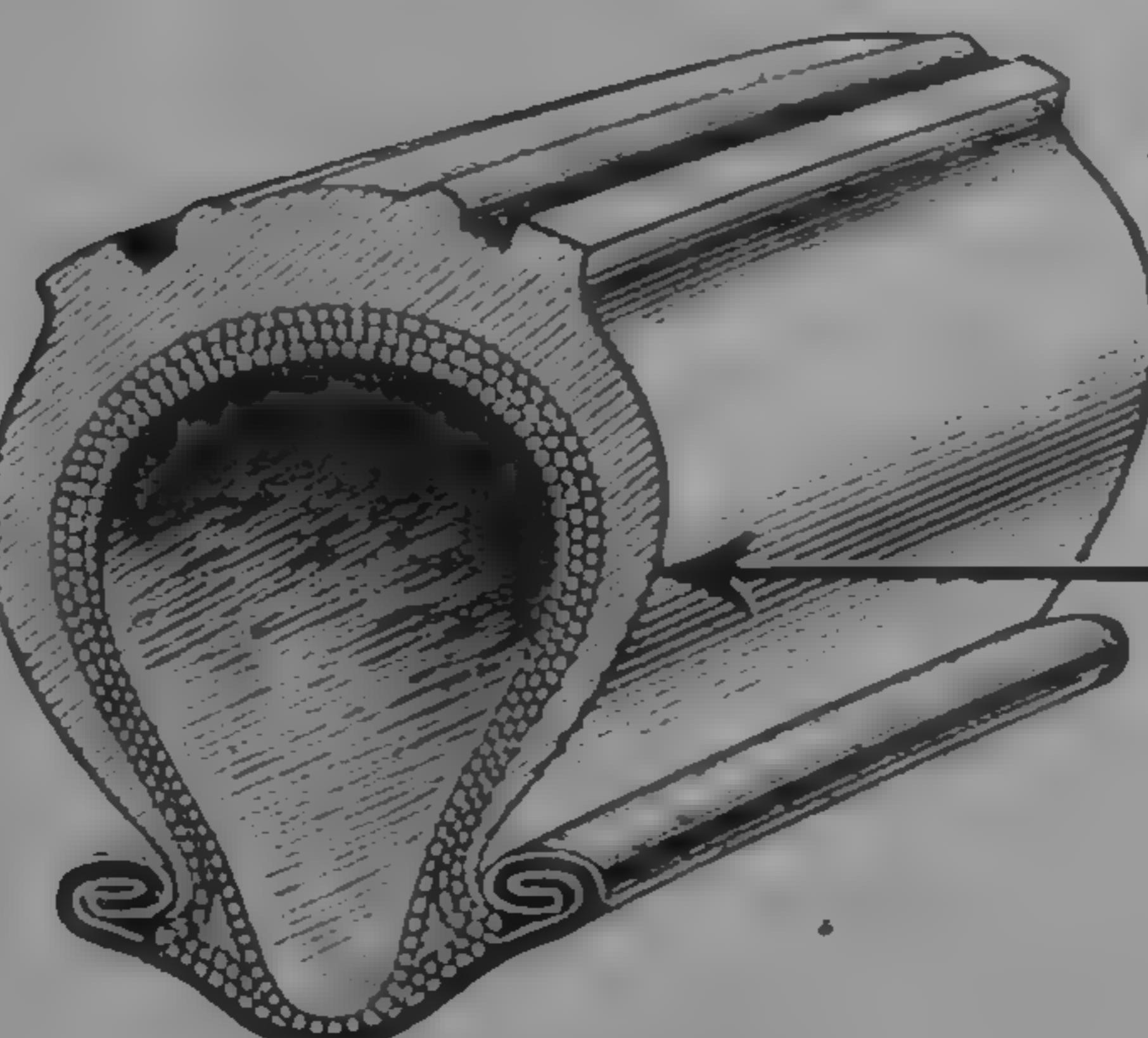
INDIA — Skippers & Co., Ltd., 86-1, Clive Street, Calcutta, and at Bombay and Cawnpore; Chettle, Holt & Co., Ltd., 9-10, Second Line Beach, Madras.

BURMA — Watson & Son, 59, Phayre Street, Rangoon.

F.M.S. & S.S. — A. C. Davis, Penang.

THE WALLS ARE

EXCEPTIONALLY STRONG.



One January Night (contd.).

that were fairly dry in the centre of the box and struck them on one of the cylinders.

Once again I got going, but in a few hundred yards the engine started missing worse than ever, so another dismount followed to change the plugs, which did not cure the trouble, but I fancy it was not quite so bad. I had only a few more miles to go and I made up my mind that, unless absolutely necessary, I would not stop again. Eventually, however, the engine stopped altogether. I had a thorough look round, but could not see anything the matter, and after a lot of pushing I managed to get it firing again, spasmodically it is true, but just sufficiently to enable me to deliver my despatches and get the necessary signatures.

Before tackling the machine preparatory to my return journey, I scraped the snow from the mudguards and endeavoured to dry with my handkerchief my neck and shoulders, which were quite wet through the melted snow running down the back of my neck. And now for that misfire! I examined plugs, valves, magneto and carburetter, all of which were functioning properly. There was a good suck on the induction stroke of each cylinder, which could be felt by placing the hand over the air inlet on the carburetter, so I pushed off again, only to find the misfiring continued. I stopped once more and looked at the float chamber first. It was half empty, although each time I had looked before there seemed a plentiful supply of spirit. It had apparently had time to fill while I was looking for the trouble in other directions. I found the filter was blocked, but even after clearing this out and getting the machine running again the misfire was not cured.

At this point I had lamp trouble, both the head

and the rear lamps giving out. The carbide was used up and the water was all gone, but, with the help of the snow, which the warmth of my hands and mixture with fresh carbide helped to melt, this trouble was cured.

I wonder if a solution of my problem of misfiring has occurred to any reader? I was certain that the magneto, the carburetter and the plugs were right, and the valves also were working properly when tested by turning the flywheel. Hating to be beaten, and more out of curiosity than believing any good would come from it, I thought I would remove the timing case cover and start up the engine by pulling over the back wheel. In the back of my mind I had a half-formed idea that one of the rocking arms lifting the valves might have somehow worked loose. The engine fired the first pull over, and I then found my trouble.

The camwheel stud which screws into the crankcase had stripped its thread, and the camwheel itself was fouling the rocking arms. I managed to tighten the stud fairly well by winding some thin wire round the partially-stripped thread, and upon starting up again was overjoyed to find the annoyance cured.

On arriving back, hot cocoa and buns from the boys on night duty and their welcome help to remove my snow-covered and frozen overalls soon put me in the best of moods, and, with a few cheery "Good-nights," I was off to bed, none the worse for my somewhat arduous experience of despatch riding at home.

GOBLIN.

[Contributions of a similar nature to the above are invited. Those that lend themselves to illustration are preferred. Articles should be addressed to the Editor MOTOR CYCLING, 7-15, Rosebery Avenue, London, E.C. 1.]



A famous American motocyclist, "Blick" Walters, recently climbed Mount Wilson on a Henderson. The mountain is 5886 ft. high, and is ascended by a road nine miles in length, with 144 hairpin bends. The climb was accomplished in 34 mins. 2 secs.

—NEWS in BRIEF.—

Lighting-up Time for Saturday, 6th July, 1918.

London	...	...	...	0.46 p.m.
Newcastle	...	...	...	10.12 p.m.
Birmingham	...	...	...	0.58 p.m.
Dublin	...	...	...	...

Lighting-up time in Ireland and Scotland is one hour after sunset, but the Scottish Lighting Regulations (Vehicles) come into effect half-an-hour after sunset.

Edinburgh	...	...	...	10.55 p.m.
Liverpool	...	...	...	10.8 p.m.
Bristol	...	...	...	9.56 p.m.
Dublin	...	...	...	10.41 p.m.

Lighting-up time in England and Wales is half-an-hour after sunset.

Moon—No moonlight this week-end.

A Dead Day for Motorcyclists.

AT a recent census taken in the heart of the city of London only 30 motorcycles out of 6000 vehicles were registered during the 12 hours period of the census.

July Moon Charts Ready.

THE moon charts compiled monthly by Messrs. C. A. Vandervell and Co., Ltd., are now ready, and may be obtained upon application to the above concern at Acton, London, W. 5.

Oil in Ontario.

A BIG oil discovery in Ontario is reported. Despite the gloomy prognostications of some experts, America's petroleum supply is not yet on the road to exhaustion.

Exceeding the Limit on One Cylinder.

WHEN stopped for exceeding the speed limit at Aldershot, an Army motorcyclist said that he was running upon one cylinder, and if he went more slowly the machine would stop dead. His mount must have been a powerful one.



A demonstration convoy was recently run between Huddersfield and Bradford by the West Riding Motor Volunteers. It was witnessed by all the Officers Commanding, Adjutants, and Company Officers of all Counties in the Northern Command, who expressed their great satisfaction. Above is shown the transport of stores, etc., at the "Dump," Brighouse.

A London-Brighton Motor Route.

AT a recent creditors' meeting of one Otto Tanini, an operatic singer, it transpired that he contributed £20,000 to the capital, amounting to £250,000, of a syndicate which he promoted with a view to making a motor road between London and Brighton.

Motorcyclists Wanted by the Ambulance Committee.

A GREAT demand for motorcyclists to be attached to the British Ambulance Committee, either as volunteers or paid drivers, is reported by the "Irish Cyclist and Motorcyclist." Those wishing to obtain particulars concerning the terms of service, etc., and first-hand information of the work are invited to communicate with Mr. T. D. Rollins, of 92, St. Lawrence's Road, Clontarf.

Pedestrians in the Road Must Move On.

COMMENTING recently upon a case of motor cycling to the public danger, the Chairman of Hull police court remarked that it seemed to be forgotten that pedestrians had as much right to the road as the drivers of vehicles, so long as they kept walking.

Fuel Production Developments.

A COMPANY styled "English Oil Fields, Ltd., " has been registered with a capital of £300,000 for the purpose of developing an oil shale district south of King's Lynn, in Norfolk. Favourable reports of the prospects have followed an expert examination of the area and its products, and great things are anticipated when circumstances permit of their development.

News in Brief (contd.).

U.S.A. Government to Fix the Price of Petrol.

A RESOLUTION authorizing the Federal Trade Commission to investigate the cost of producing and refining American petroleum has been introduced into the House of Representatives, and may result in the price of petrol becoming Government controlled.

Harleys Out to Win the War.

BONDS of the third Liberty Loan to the amount of 143,000 dollars have been bought by the Harley-Davidson organization in Milwaukee. All these bonds were subscribed to by employees without any further incentive than a formal letter stating that subscriptions would be received through the company.

Four at a Blow!

EVEN greater prowess than that of the famous tailor in the fairy tale, who killed seven at a blow, was that of a Fulwood motocyclist, who was recently stated to have knocked down four women while driving to the danger of the public. Defendant, it was said, mounted the footpath, and when he knocked down the four women shouted "Heigh-up!" A fine of 60s. was imposed.

No Bosch Goods for Australia.

NEWS has been received that the Australian Government has prohibited the importation into Australia of American-made Bosch magneto. The High Commissioner of the Commonwealth, in a letter announcing this fact, says that "this action has been taken in order that the Commonwealth may not be a party to maintaining German trade names for the ultimate benefit of German manufacturers after the war.

A Photographic War Souvenir.

SOME time ago Messrs. The Harley Davidson Motor Co., Ltd., published a military souvenir entitled "Honourable Mention," containing photographs of a large number of Harley riders serving with the Forces. A few of these brochures are still available, and would probably be of great interest to the friends of those whose photographs appear therein. A copy of "Honourable Mention" will therefore be sent to any reader who applies to the Harley-Davidson Co. at 74, Newman Street, London, W. 1.

A Metric Conversion Publication.

WE have received from the British Italian Commercial Association a copy of the Italian edition of Mr. A. J. Lawson's "Metric Weights and Measures and their British Equivalents," which is being published by Messrs. Eyre and Spottiswoode on behalf of the Association. The publication of this work has not been undertaken for profit but to assist the objects of the Association by facilitating the use of metric measurements and currency in business transactions with Italy. Conversion tables of practically every British unit of measurement into metric equivalents are given with great detail and accuracy. The adoption of the decimal system in this country is considered in detail, and tables of pounds, shillings and pence expressed in decimals of a florin are included.

The text is clearly printed in both English and Italian.



The American naval contingent have brought many sidecar combinations over with them, which they use for shore duty. The heavy double front connection is noteworthy.—American official photograph.

Hints for the Credulous.

FROM the "Midland Daily Tribune" :—"For one thing the steering head should be examined periodically for play. If any play be felt it is a simple matter to tighten the belt." An alternative cure would be to pump up the tyres.

A Fatal Dust Storm.

A WARNING to non-users of goggles is contained in the report of a Gateshead motocyclist's death, due, apparently, to the rider having been blinded by a dust storm. His machine crashed into some stone steps in consequence and he sustained fatal injuries.

Forty-five M.P.H.—And No Fine!

IN dismissing a recent charge of dangerous driving against an officer motocyclist, the chairman of the Enfield Bench said that the defendant's speed was 25 miles an hour above the limit, but as he was engaged upon special Army duty he would be excused. Even in the Army there are compensations.

Tetanus in Road Dust.

THE report of a cycling accident to a 13-year-old Twickenham girl, who grazed her elbow and as a result developed lockjaw, conveys a very distinct warning to all road users. A scratch or abrasion of any kind, however small, caused by coming into contact with the road surface, should be given instant and careful treatment, as the tetanus germ may easily be acquired from road dust.

A Motorcycle Made by Night.

AMONG various charges brought against Captain H. E. Thomas, of the Canadian Army Service Corps, at a recent court martial at Middlesex Guildhall, was that of applying Government motorcycle parts and tyres to his own use while in charge of a workshop at a Canadian camp. It was alleged that the accused gave instructions to an N.C.O. to construct him a motorcycle, which was done in Government time out of Government material. Considerable secrecy was exercised, the work being done mostly at night, while in the daytime the machine was kept in a pit. It was painted red, and afterwards sold for £30. The case was adjourned.

A Plea for the Existing Road Rule.

AMONG all the advocations of an alteration of the present rule of the road which appear from time to time it is refreshing to come across, in "The Motor World," a plea for its retention, on the grounds that for several reasons a gauche is the safer rule of the two. The writer is Sir John Macdonald, a habitue of the road, both on horsed and motor vehicles, of the last 60 years. Sir John makes the interesting statement that the "continental practice" of keeping to the right so often referred to is not universal. In Austria the rule is the same as our own, and at the Paris Road Conference held some years ago a strong argument was brought forward by the Marquis De Dion. As a result it was

the French rule should be changed, but the war unfortunately intervened.



THE amalgamation of the Royal Flying Corps and the R.N.A.S. has produced a wing offering great opportunity, both to the young man whose turn has come and to the older man who, under the revised age limit, is called upon to serve King and country. More especially does the Royal Air Force appeal to the man with a knowledge of motor mechanics, and good positions, both in the flying and administrative branches of the Force, await those who possess the requisite amount of brains and initiative.

A young man who is conversant with motorcycle engines could easily pass the test which is given him before he can be accepted as an air mechanic 1st class, which carries with it pay at the rate of 1s. per day. A knowledge of motor mechanics will also prove invaluable to the young recruit who proposes to become a pilot, for technical tests have to be passed in his case as well. Up-to-date works of instruction should therefore be well studied.

Many of the present cadets were initiated into the mysteries of the internal-combustion engine by the motorcycle. Not a few of these youngsters take a pardonable pride in the neat writing on that part of their driving licences which, according to the

legal fraternity, should be blank. I know of one R.A.F. cadet who was quite anxious to show the Air Force interviewing officer his endorsement for reckless driving! Another pilot in the making has three endorsements, two of which were achieved on the same day. Perhaps it is all very wrong for motorists to become candidates for endorsements, but most of us have earned one, if we do not actually possess one. And it is truly this spirit flowing through the youth of our nation which makes our flying men what they are. Were it not for the high degree of physical fitness necessary to become a flying officer, there would not be the slightest difficulty in turning all the youth of our armies into first-class flying men. The spirit is in them all.

How to Secure a Commission.

The earliest age at which a candidate can be admitted to a cadet wing for pilots and observers is seventeen years and eleven months, and the age limit for this section is thirty. The medical examination to be passed by candidates for the cadet wing is, to say the least, stiff. Sight, hearing, lungs and heart have to be perfect, but as one youngster of eighteen put it, "There is nothing whatever to get the wind up about if a chap is a man at all." It is, of course, only right to ensure the absolute fitness of every candidate.

Candidates passed as observers are frequently not so delighted as the lucky ones passed as pilots, but the small percentage successful have indeed a reason to be proud of their physical fitness.

Having attained suitable recommendations, applications should be made to a reception dépôt, where an interview will be given, and likely candidates passed on to a selection board. In the case of non-commissioned ranks, application must also be made to a reception dépôt. The following is a complete list of these dépôts:—

40, Upper Brook Street, Mayfair, London, W. 1; 8, Tyndall's Park Road, Bristol; 12, Newport Road, Cardiff; Carlton Chambers, Paradise Street, Birmingham; Midland Bank Warehouse, King Street, Nottingham; 117, Mount Pleasant, Liverpool; 6, Portland Crescent, Leeds; 10,



WHAT SHALL Military Services for

IV.

HOW
TO
JOIN
THE
R.A.F.

SHALL I JOIN?

Services for Motorcyclists.

application to the depot nearest to their home address.

Once accepted and having been medically pronounced satisfactory, candidates are sent to camp for a period of physical training, after which they are divided into A and B classes. A section takes instructions in the duties of commissioned flying officers, and B section will become non-commissioned flying officers. Later the newly-joined cadet will be sent to a training centre, where he is given instruction in most types of aeroplanes and seaplanes, and he then passes in succession through schools of aeronautics and armament. The whole course of instruction takes several months, and this speaks highly of a system which can turn out flying officers in so short a period.

Eventually the cadet will be posted to a squadron for duty, and will receive 7s. 6d. a day, plus 4s. a day when flying. After a time he becomes a second lieutenant with 10s. a day and 4s. a day flying pay. The next promotion is to lieutenant with 12s. a day, rising to 16s., with 8s. a day when on duty which involves flying. This pay is exclusive of free quarters, rations, fuel, light and other allowances. A successful cadet may attain the rank of lieutenant in about six months.

It must be remembered that, having joined, you are liable for service at home or abroad, and may be detailed for service in any branch of the R.A.F., i.e., airship, aeroplane, seaplane or kite balloon work. If fit, every man of the R.A.F. must be prepared to go into the air. Too much emphasis cannot be laid on this point.

Non-commissioned Ranks.

The age limits for men are from eighteen to forty-one, increased in special cases to fifty years. If a man joins as an ordinary airman or private 2nd class, he stands the usual chance of promotion, but if he joins one of the technical sections he is better paid and his chances of advancement are far more rosy.

Some of the branches which should particularly appeal to readers of MOTOR CYCLING are:—Instrument

Sydenham Terrace, North Road, Newcastle-on-Tyne; and for Scottish recruits—9, Somerset Place, Saltiehall Street, Glasgow.

Intending recruits should naturally make

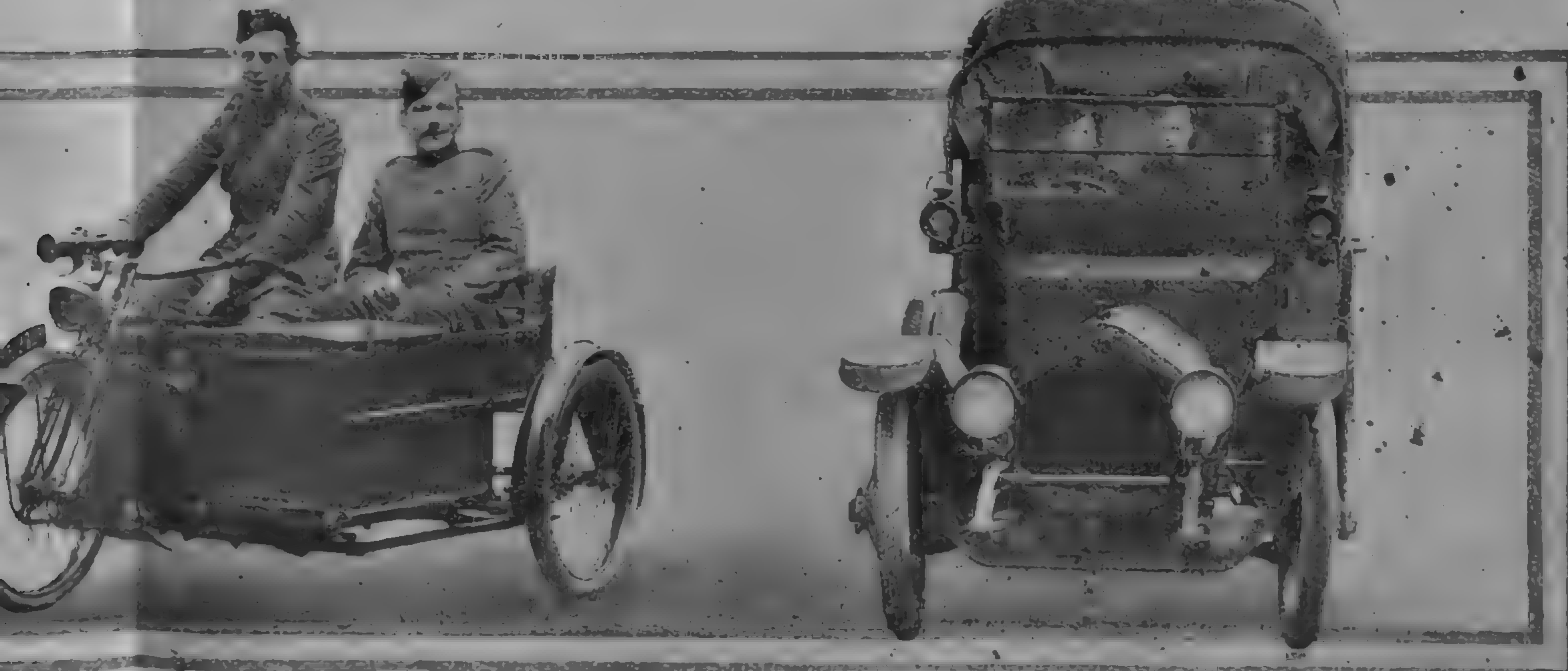


repairs, magneto repairers, riggers, turners, tinsmiths, draughtsmen, drivers, despatch riders, motor-boat drivers, motor-boat repairers, motor-boat engineers, carpenters.

When a man joins he has every opportunity given him of proving his capabilities in any one of these branches. An idea of pay can be got from the following:—Air mechanic, first-class, 4s. per day; corporal mechanic, 5s. per day; sergeant mechanic, 6s. per day; chief mechanic, 7s. to 9s. per day; master mechanic, 11s. per day; chief master mechanic, 12s. per day.

Rations, lodging and kit and certain allowances also prevail. Separation allowances at full Army rates are allowed.

It does not matter into what branch of the Force a man may go, he will find the work intensely interesting. Be he a flying or a technical rating, he will not suffer from the monotony of an ordinary Tommy's life. There is always movement and bustle—always something to keep him busy. The hours of duty vary according to the particular stations. The average member of the Royal Air Force gets four days leave every three months, with



2nd July, 1918.

What Shall I Join? (contd.).

generous local leave. The writer has had over 12 months service, and never regrets the day when he chose to join what is rapidly becoming the "crack wing of his Majesty's Forces."

The branch which most readers of *MOTOR CYCLING* will fancy will undoubtedly be despatch riding and motor driving, and although this is a very much sought after department, there is still plenty of room, especially if the applicant be in one of the lower medical grades. The standard machine for the R.A.F. is the 3½ h.p. P. and M., fitted with sidecar. The latter is done to economize in petrol. In the old days a car was usually sent to meet officers at railway stations. A trip necessitating the transport of one officer on business was usually made in a car. Now all that is changed, and the trips are made in the petrol-saving sidecar. The tenders and touring cars are Crossleys, and the lorries chiefly Maudslays.

Most stations are equipped with a repair shop employing a number of skilled hands varying in number according to the size of the transport. Women are seldom employed in these shops, and there are good openings for skilled male workers. A keen motor mechanic can easily adapt his knowledge to aero engines, and every land and sea flight station employs many aero engine fitters and repairers. Promotion in this department comes rapidly to the useful man.

The R.A.F. also offers opportunities to other branches of administrative work. Jobs on the intelligence staff and on the clerical staff can be obtained. In the latter there is a good deal of technical work to

be done in the way of returns necessitating a knowledge of engineering. If a man is unable to go in for the more active side of engineering, he may appeal for a billet in the clerks' office with a good chance of acceptance.

[To new readers we commend the articles which have previously appeared under the heading of "What Shall I Join?" These are as follow:—The Army Service Corps (Mechanical Transport), in our issue of 30th April; the Royal Air Force (as a motorcyclist), in our issue of 21st May, and, for those who are exempt from military service, the Headquarters Central Detachment of the Metropolitan Special Constabulary in our issue of 14th May. Readers intending to join any technical corps would do well to study the most modern handbooks procurable. Practically all subjects are covered in the Temple Press War Service Manuals. Instruction in lathe work is conveyed in "The Motorist's Workshop" (1s. 3d. net), and in the engine and car overhauls in "Motor Repair Work" (1s. 3d. net). "The Motor Manual" (2s. net) is the standard handbook on the motorcar. "Motor Mechanics" (2s. 6d. net) is the standard work on engine tuning. The simplest work on driving is "How to Drive a Light Car" (1s. 6d. net); a more advanced book is "How to Drive a Motorcar" (2s. net; new edition in the Press). "The Art of Driving a Motorcycle" (1s. net) and "Motor Cycling Manual" (1s. net) cover the motorcycle. "The Book of the Ford" (2s. net) covers the Ford. "Practical Flying" (5s. net) is the pupil pilot's handbook. They are all procurable from these offices. En.]



No petrol restrictions exist in the States. A few machines and feminine riders seen at Playa Del Rey (the King's Beach) on Sunday 2nd June. No fewer than 427 machines were counted on the Strand on that occasion.

DISTINCTLY CONCERNING MOTORCYCLISTS

Personal Pals on Well-known Riders.



Gunner Leonard Allen.

I HAVE just heard from Gunner Leonard Allen, of the Motor Machine Gun Battery, which he joined early in 1915, getting counted out later by a sniper. Allen writes very optimistically, and his spirit is so typical of the old competition boys that I venture to reproduce his letter verbatim. This is what he says:—"I am now in France again and my old battery, the—th, pulled off some very good stunts with their machines during the last few weeks. The infantry boys were more than surprised when they spotted two motor machine gunners and a Douglas scout, dashing along a well-known road in C— firing their guns like the very devil, much to the 'delight' of 'Jerry.' The infantry have now great faith in the motor machine guns, after showing what they could really do in the way of handing out an extra dose of iron rations from their guns, which proved a little more than Fritz could digest. We returned with beaupou scars, with the two machines still going strong, although badly camouflaged with mud. I thought the riders of these two scout machines had stuck on some disc wheels, but on investigation I discovered that the mud had congealed, and being reinforced by the spokes entirely deceived me; ultimately the riders convinced me by chipping off lumps of the mud."

AM informed that Stanley Carter is now a staff paymaster in the R.N.R. He will be remembered as one of the most prominent members of the Herts. County A.C. and Chairman of the Competition Committee of the A.C.U. In addition to being a famous exponent of the Matchless machine and the winner of many hill-climbs in the good old days Stanley was one of the few amateurs who could hold his own against the trade man when out for blood.

NEWS reaches me of another of the old competition riders of Rudge and Rover machines in pre-war days, Capt. A. M. C. Scott, who is now an equipment officer in the R.A.F. The captain was a faithful member of the "immaculate" brigade, and would always don a pair of cream flannel trousers after a long road trial. Scott is attached to a famous flying school up North where several of our well-known speed boys are stationed. I wonder if his memory will carry him back to the days when he was a colleague of mine at Great Portland Street depot and a certain wild ride to Town from Taunton?



Lieut. Reginald Charlesworth.

FROM a military hospital in the eastern counties comes a letter from Lieut. Reginald Charlesworth, the old amateur Zenith exponent. Originally enlisting as a private in the Queen's Westminsters, he was transferred to the Machine Gun Corps, subsequently being granted a commission as an Army dental surgeon. His good showings in the London-Edinburgh, London Exeter and Anglo-Dutch Trials will be remembered by those who follow the fortunes of the Zenith—a machine which he has never forsaken. The photograph shows him in the "tin hat" of the H.Q.C.D., wherein he did yeoman service for the first 2½ years of the war.

HEARD from Lieut. A. F. Selby, of Ben Nevis fame, who has been having a warm time of late, being in charge of several workshops only about seven miles back from where the enemy broke through. For a few days he had an exciting time, but thanks to a splendid supply of lorries succeeded in getting everything of value away. He remarks, "People can work pretty hard at loading when they can smell the Boche coming." For the first time during the war he loaded his revolver and climbed a tower, a point of observation, to see how close the Boches were getting, while



Lieut. A. F. Selby.



George Simpson.

the loading and dismantling of the workshops went on down below. It seems ages since he made that adventurous trip on a 3½ h.p. Sunbeam to the summit of Ben Nevis.

HAD a most interesting letter from an old friend the other day, George Simpson to wit, who has been attached to the R.A.F. for some time now up in Scotland. Simpson was not by any means a well-known speed exponent, but was an excellent clubman, more especially of Hatfield and Wisley Hut fame. No competition was held near London that was not graced with his presence. He was always a willing observer or steward, and many a hearty laugh we have enjoyed together over the different styles of riders' positions. I well remember Simpson doing a lively blind down to Cheltenham with a mutual friend on a Harley combination. It was a fairly dark night, and the only guidance the driver had to the road was the telegraph posts. Everything was straight sailing until they came to a sharp corner, and before the driver had time to pull up they both went over a heap of stones at about 30 m.p.h. I was hanging on at the time, and of course expected to find men and machine smashed up. Imagine my surprise when I arrived on the scene and found that not a single part of the machine was broken and both riders had come through without a scratch.

FEW despatch riders could claim a finer record of bravery than Corporal A. W. Mitchell of the Canadians, late of Montgomery. Having won the D.C.M. in the battle of La Basse, and the French Medaille Militaire on the Somme, besides being mentioned in despatches, he has now been awarded a bar to his D.C.M. for "most conspicuous gallantry." The particular incident which gained him this distinction is described in the "London Gazette" as follows:—"When carrying a most important despatch the handlebar of his motorcycle was broken with a fragment of shell, yet, after fixing his machine, he continued to ride along the road with one handlebar in face of the enemy machine-gun fire, and delivered his despatch, thereby encouraging and setting a splendid example to all who saw him." Mitchell joined the Canadian Army at the outbreak of war, and has served at the Front for nearly three years.

REVOLUTIONIZING MOTORCYCLE DESIGN.

An Earnest Endeavour to Remedy the Defects and Shortcomings of Modern Motorcycle Practice, Bringing it Up to the Level of the Best Car Production.

A series of critical articles by Mr. D. S. Heather, B.Sc., working in conjunction with a number of practical designers.

PART XV.

General Details.

IN previous instalments of this series the writer has discussed, more or less fully, the design of the main portions of a motorcycle. The power unit, clutch, gearbox and transmission have all received consideration, as have the frame, wheels, steering, springing, brakes and so on. There are still, however, a few items which deserve comment, and it will not be out of place, in view of the volume of correspondence on the subject which has lately appeared in MOTOR CYCLING, if a few notes upon the kick-starter problem are given.

Many correspondents have complained that the kick-starters fitted to their machines are practically useless. The writer is prepared to wager that 90 per cent. of these correspondents own machines which have gearboxes designed in such a manner that the clutch is on the rear wheel side of the gears. This means that before the kick-starter can be used with the rear wheel on the ground the clutch must be disengaged, the gears being left in engagement, usually in first speed. Now, if the clutch be not perfectly free in its disengaged position, the kick-starter can only be used against its "drag," and the greater this drag is, that is to say, the less free the clutch is when out, the harder it will be to swing the kick-starter pedal. As most gearboxes which are arranged in this manner have multiplate clutches running in oil, which by their very nature always drag badly when disengaged, it is usually very difficult indeed to turn the engine by means of the kick-starter at a sufficient speed to ensure a start being made. With a kick-starter so arranged that the clutch has to be left in engagement and the gear lever placed in neutral, there should be no difficulty whatever, provided that ignition and carburation are correct. The designer, of course, must take care that the gear ratio between starter pedal and engine is correct, so that the engine may be turned sufficiently fast without undue exertion.

The Four-cylinder the Easiest to Start.

With a twin it is naturally vastly easier to ensure a start than with a single, as there is one explosion point per revolution, instead of one at every two revolutions. With the four it is even easier, for there is a swing point twice at every revolution of the engine. Think what this means; with the single the engine may be turned through three-and-a-half revolutions and yet have only one chance to fire, whereas with a four-cylinder there would be no fewer than seven chances. Moreover, the cylinders of a 1000 c.c. four-cylinder are each no bigger than that of a 2 h.p. Humber, so that the exhaust lifter can be dispensed with and the engine may be lagged over four or five compressions with ease.

There is yet one more feature which ensures easy starting for the small four, and that lies in the fact that the magneto runs at engine speed: hence there is no difficulty in swinging the engine sufficiently fast to get a good spark, even with a cold engine. If designers will but bear these facts in mind and avoid external chains, or gearwheels covered merely with a piece of sheet metal, and so prevent the efficiency of the starter from being affected by the weather, there should be no occasion for complaints.

Tanks have greatly improved of recent years, and trouble with leakage from the tank itself is now uncommon. Fillers, however, are still more or less unsatisfactory. Years of experience have not induced more than one or two manufacturers to fit fillers of such a size that the usual garage funnel can be used, or petrol may be poured in direct from the can. The excellent raised fillers used on Levis machines could be adopted with advantage, for they stand up an inch or two above the top of the tank, and thus enable the rider to fill up to the last drop without danger of overfilling or splashing. Tanks should hold at least 2½ gallons of petrol and more if possible, oil being carried in the engine sump.

The Shortcomings of Small Fittings.

When we look at the accessories we are forced to the conclusion that manufacturers grudge every half-penny which they have to spend upon outside supplies, for if reference be made to the trade lists issued by manufacturers of petrol taps and such items it will be found that those intended for motorcycle use are usually the cheapest line manufactured. No wonder, then, that petrol taps leak persistently, priming taps will not prime, filler caps fall off with annoying regularity, and petrol gauges are useless. A few shillings per machine spent upon the provision of really first-class fittings would be well repaid by the satisfaction obtained.

The design of stands requires considerable attention, especially for sidecar work; the present type, having a base which is always at right angles to the plane of the machine, is awkward on a cambered road, and is a positive nuisance and danger with a sidecar. The effort required to lift a heavy machine on to its stand is far too great, even for a robust person, and some means of overcoming this trouble must be adopted. The American stand, made out of a piece of channel steel, is usually far stronger than the English type, which, of course, has to consist of tubes of various artistic sections, which tubes are joined together by a few brazed joints, presumably because there are not enough already in the main frame! The Budge stand may be quoted as a decided improvement upon the average English article, if only for its spring gear, which does away with these awful little clips on the end of the rear mudguard which are always either too strong, so that the stand will not snick into place, or too weak, so that it falls down over every bump.

Upon the vexed subject of controls the writer does not propose to state any definite opinion. It will be sufficient to say that he has never yet seen a Bowden wire fail unless it was either grossly overloaded or imperfectly installed. With proper installation, a Bowden wire of reasonable size should be amply strong for any control on a motorcycle, but, unfortunately, the manufacturers of the Bowden mechanism are themselves bad offenders, for they supply control levers which compel the wires to bend in quite small circles, and which allow water to penetrate to the cable at many points. If care be taken to avoid curves of less than 6 in. radius, and the cables be kept lubricated so as to prevent the formation of rust, Bowden controls should give entire satisfaction, and they can easily be adapted to twist-grip control if that is desired.



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UNIMPAIRED
AFTER 3½ YEARS OF
CONTINUOUS SERVICE.**



“Though my machine has been ridden continuously for 3½ years, it does not appear to have lost any power, but takes its usual heavy load as easily as ever.”

J. R. L., Warrington.

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There is no other motorcycle which can be so thoroughly understood before its purchase as the Royal Enfield. In addition to the Royal Enfield motor catalogue, containing particulars of the 2½ h.p. Two-Stroke, the 3 h.p. Twin-cylinder, and the 6 h.p. Sidecar Combination, we publish a beautifully illustrated volume entitled "Testimony that Tells," dealing

with the experiences of Royal Enfield owners in all parts of the world, and a special volume for ladies interested in motorcycling. In addition, we issue a complete handbook, fully illustrated, and containing valuable hints and tips for each of our models. Any of these Royal Enfield motorring volumes will be promptly supplied on request.

N.B.—We can supply 3 h.p. and 6 h.p. Royal Enfield models at once to clients holding Priority Certificates from the Ministry of Munitions.

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STURMEY ARCHER

COUNTERSHAFT GEAR R

NOTICE TO THE MOTORCYCLE TRADE.

Until the war is over, the Sturmey-Archer Countershaft Gear cannot be supplied, since it is engaged on sterner work, but when the job is done you will understand why all the men at the front have such confidence in it. For the moment, the public will put up with what it can get, for the men at the front must have the best; but when the Sturmey-Archer is once more available, there will only be one gear for those who know.

STURMEY ARCHER GEARS, LTD., NOTTINGHAM.

Revolutionizing Motorcycle Design (contd.).

Attention to the various items which have now been mentioned should give us machines vastly more satisfactory than those we know at present, but one requirement of the post-war two-wheeled automobile has still to be met. It must be clean. The whole of the power unit and transmission must be enclosed to prevent oil and grease from getting where it is not required, namely, upon the rider's clothes, but there still remains the mud question. Now, the rear wheel can quite easily be effectively mudguarded, and there are several machines now on the road which do not allow the rear wheel to sling mud on to the rider. The front wheel, however, is a more difficult matter, and it seems nearly impossible to prevent some mud, at any rate, from blowing back on to the machine. The very wide front guards fitted to some heavy machines at the present time are of very little use at all, and do not seem to be the least bit more effective than the old narrow guards.

No mud protection system can ever be judged upon paper; experience on the road is the only real test, but there appears no reason why a good front wheel mudguard, combined with well-carried-out leg shields on an extension of the Scott principle, should not prove a solution of the problem. It is to be hoped

that in the future we shall not be presented with the cycle types of guards which were offered to us on some former machines. Good heavy-gauge metal, with wired edges, properly reinforced for stays and connections, is essential, and above all it must be protected from rust. Enamel is not good enough. The various patent rust-preventing processes seem of very little use in practice, but why cannot ordinary galvanizing be used? Is there any radical objection beyond the fact that it is so common a process? Makers in general have so far shirked the whole question and have left the all-weather rider to provide for himself as best he could, but in the immediate future they must tackle this, among other jobs, and provide a machine which incorporates complete protection from road dirt with its design. So will be produced a clean, comfortable machine, reliable, economical in upkeep, and prodigal of power; in fact, a motorcycle with the comfort and convenience of a car, a post-war two-wheeled automobile.

D. S. HEATHER, B.Sc.

[A break of a few weeks will supervene, after which Mr. Heather will proceed to give details of a design which, while not claiming to be ideal, will illustrate what could be done immediately with our present knowledge to improve the modern motorcycle.—ED.]

AN ORDINARY RIDER'S POINT OF VIEW.

Two Hours' Thinking—And One Thing Decided.

"AFTER the war—after the war."—The wheels of the railway carriage I sat in seemed to be repeating the words I muttered to myself as I settled down to some thinking and planning to while away the two hours or so that would pass before I reached London.

I had been making a call in a wayside village, and on inquiring found that I should have to wait about an hour and a half for a train to town—so, remembering that I had a motor-cycling friend somewhere near on war work, who is the happy possessor of a permit to use petrol, I looked him up, and he very kindly suggested taking me to a station some miles away.

It was a sporty run; my time was fully occupied in holding on my straw hat, and doing the "lean over at the corner" stunt. I wanted to ask a lot of questions about the bus—it was "some" bus. I could not recognize the make, as it had recently been camouflaged by painting it a dark khaki colour. When I opened my mouth to say something, my friend got in first with another "Hold tight!" or some such warning. We landed at the station to find my train already in, and I got aboard just as it moved off. I had, however, risked being left behind by taking a hurried glance over the machine, and, to my surprise, saw a Blackburne twin engine.

I am one of the unfortunate multitude who have to content themselves with memories of bygone days, the thoughts of pleasures to come—and the wheels kept on repeating "After the war—after the war."

I have a very good bus, but, my gracious! the way George transported me from his village to the station gives me something to think about. Poor old bus. I'm afraid you'll have to go; you've served me well, but a new creation has arrived with your faults omitted and some good points added that you can never have. I must keep up to date. You know how I used to kick and how you refused to start? I know you can't help having inside flywheels that get clogged with oil, which makes you stiff; your young friend is more up-to-date—flywheel outside, where it ought to be—one kick, and it starts—no stiffness when cold, and no resistance when warm.

Then the detachable cylinder heads; I considered

this point very carefully. Up till now I have never had any serious difficulty in removing complete cylinders for the purpose of decarbonizing—although I know of some machines where the engine must be taken right out of the frame, and they are not all American! It must be easier to take off the heads than to remove the complete cylinder. Some may say "You can't get at the rings unless you remove the whole cylinder." True, but so long as the compression is good the rings should be left alone, and in any case the complete cylinder need not come off oftener than, say, once in six times. Besides, where the top is detachable the complete cylinder could be removed in two pieces, whereas the whole engine might have to come out if the cylinder were a one piece job; another score for this type of engine. I'm afraid my favourite engine is having a bad time!

Again, I remembered that we had got into top gear (35 to 1) and never changed down for anything. My friend has had more experience than I, but I am no novice. I started the sport in 1909, and have ridden with a sidecar, attached all the time, but my bus would have asked for a change down on two or three occasions; especially when we had to crawl behind a tar-spraying contraption, and certainly where we took a bad corner and found the road standing up on its hind legs.

I want a good machine: I have always thought that I had one of the best, but now—well—poor old bus—! Anyhow, I need not sell the lot; the Blackburne engine is arranged so that it will take the place of my old one without any alteration, which is good. Then, again, the ground clearance will be greatly increased (instead of 4 ins. it will be almost 7 ins.), and I shall not have to heave it up that ledge in front of my motor house. Good again; this is quite cheerful. I must certainly write to George and get some more details, although I have piled up a good many points in favour of the Blackburne, and I expect that

"After—the—war—after—the—war." Gracious, I'm home! Well, that two hours has slipped past quickly—two hours' thinking—and one thing decided...

JAY-GEE.

A23

THE EDITOR'S CORRESPONDENCE.

The Editor is not responsible for, neither does he necessarily agree with, the views taken by correspondents. Both sides of any topic are given equal publicity. A pen-name or initials can be given for publication, but the writer's full name and address must always be sent. All communications should be written on one side of the paper only.

A Puzzling New Development in Motorcycle Troubles.

We have all heard of the machine that runs well on the level, but not on hills, but I have just come across the opposite: a motorcycle that will run well on hills though not on the level.

A friend of mine who owns a 2½ h.p., two-stroke, two-speed mount and uses it for munition work recently found that the machine was running badly on the road. He was surprised, however, upon reaching a hill and opening up to find that, instead of backfiring and spluttering, as he expected it to do, the machine bounded forward with new life, climbing upon top the hill up which he had always gone on low gear, with power to spare. This incident he put down to a minor fault in the petrol level. About a hundred yards from the summit the trouble commenced again and continued, only to cease when climbing subsequent hills.

Upon reaching home my friend examined the carburettor and a bright thought struck him. The float chamber was in front; therefore, if the level were wrong, the mixing chamber would be starved except upon hills. Still, however, he could not understand the terrific extra power, considering the small capacity of the machine, obtained. The fault in the carburettor was remedied by putting the float chamber behind, with no effect, however, beyond a little extra power upon hills, but a falling off on the flat.

Getting tired of the trouble, this owner then thoroughly overhauled the engine and re-assembled it with great anticipations. At this stage there was no play in any of the bearings; in fact, everything fitted perfectly. When taken upon the road once more, however, the machine fired evenly and regularly: it had plenty of petrol and different sized jets were tried, but it would barely take its own weight. Upon reaching a hill it throbbed with life and became a perfect marvel, climbing upon top gear without the slightest sign of a misfire and with plenty of power to spare. When the top was achieved, however—well, the owner used pretty language. Another friend of his, used to tuning aero engines, came and tested it, made use of technical phrases, but finally gave it up as a bad job. The two-stroke by this time would start up nicely, run for a few yards, then settle down to a steady half-mile per hour, an easy sort of trot. So soon as anyone mounted it, it gave up the ghost, but if the gear (an Enfield two-speed) were put into free it would run steadily for a time; would then fire badly, nearly peter out, recover and so on.

The machine has now been sent to the makers. Whenever its owner writes to them they are still seeing to it, but they have never cured it yet. I should like to hear if any of your readers have had a similar experience and if so how they cured it.

Bristol.

A24

PERSEUS.

Cost the First Consideration in Post-war Models.

With reference to all this talk appearing in your columns as to the post-war development of motorcycles, four-cylinders, shaft drive, spring frames, etc., I should like to say a few words which not only express my personal view but that of my friends, who are keen motorcyclists. Over development in the past killed the tricar, and it looks very much as if the same thing were going to happen to the motorcycle. The cost of living after the war is not going to be so cheap as it was before, and if motorcycles are going to be developed to the extent that some people expect many of us will have to go without them on account of the cost. Fifty pounds is about the limit I am prepared to go to in buying a motorcycle, and it seems to me that the only model I shall be able to procure for

this sum in the piping days of peace to come is a small two-stroke. The gist of what I am driving at is this—that I hope the single-cylinder, direct belt-drive, sporting T.T. mount is not going to become obsolete. I have ridden this type of machine since 1911, after owning or borrowing all sorts of other models previously, and for fast, reliable cheap road service it cannot be beaten. Fitted with a good decompressor, such a mount is easy

to handle in traffic, and I want neither the bother nor the weight of clutches and speed gears. Torque and balance may not be all that is desired theoretically, but who notices or cares about that on a good straight road with a wide open throttle? Some people, in spite of the war, seem to be getting a bit too fastidious and luxurious in their tastes. I have no connection with the company whatever, except as a satisfied user of their machines, but my last three mounts have been T.T. racing Triumphs, and as

soon as this war is over my next mount is going to be the same again, if the Triumph Co. still manufacture this model.

SIXTY CLUB.

The "Woman D.R." A Fallacy.

I note frequent references to the "Woman D.R." especially in your page "Woman and her Motorcycle." May I point out that there is no such thing? Every individual in the Services riding a motorcycle is not necessarily a despatch rider. The D.R., in the correct sense of the term, is an N.C.O. or sapper attached to the Signal Service, R.E. He carries despatches from one signal office to another and not from one office to another, as is often imagined, except in very rare cases. No women are employed upon this work.

The motorcyclists attached to the R.A.F., although they perform somewhat similar work, are not, for some reason, known as D.R.s. They work entirely for the R.A.F., whereas the D.R. proper carries despatches for everybody.

I recollect seeing reference in your pages to a W.A.A.C. wearing a blue and white arm band, the sign of the Signal Service, and you were of opinion that she was a D.R. I am afraid she was not. There are plenty of W.A.A.C.s in Signals, but they are telegraphists and telephonists employed at the various bases and other safe areas.

A.F.S.

B.E.F.



Determined not to be denied the pleasures of the open road, manager "Billy" Wells, of Indian fame, has built himself a tandem cycle. Mr. J. H. Adams will be recognized as his partner on this occasion.

Correspondence (contd.).

In Defence of the American Machine.

May I ask a little space in which to reply to "W.D." who writes under the heading of "A Plea for the One Lunger"? He must have bought a pup when he bought his Yankee twin, as he says that a screwdriver is necessary in order to open the compression taps and also to close them. Surely he knows how to remedy this, if it is so?

He also complains of the machine being too complicated. I do not see where it comes in, or why the carburettor is a mysterious contrivance, needing constant adjustment and only giving 20 m.p.g. My experience is quite different from that of your correspondent. I am glad to say. My Yankee twin gives me 92 miles per gallon, and I never touch the carburettor except to open and close the air slides. This mileage per gallon was carefully measured over a 26-mile journey. I can also ride hands off over a fair surface for any length of time until necessity in the form of cattle, etc., compels me to take hold once more.

Your correspondent also complains of having to inject in order to start. I wonder if his 1912 4½ h.p. machine needs injection, and, if so, which he considers the best method of injecting, the Indian device with the injector forming the tank filling stopper or an oil can used for the purpose as is the practice of a good many motorcyclists? I know which I prefer, but perhaps "W.D.'s" tank was fitted with a priming cock and pipe leading to the compression tap.

I have ridden a good many machines, but still prefer one that can do its work without thumping its heart out and getting very tired over it into the bargain, and also one which will not thump the belt ends out; a nice business in winter time, going back to look for the fastener or something, perhaps dropped in the snow, if you have not got a spare. My next machine will be either a high-powered English or Yankee machine, but I shall prefer one with that very excellent feature—mechanical lubrication.

7.9 SOLO.

Claeton.

Universal 28-in. Wheels Wanted.

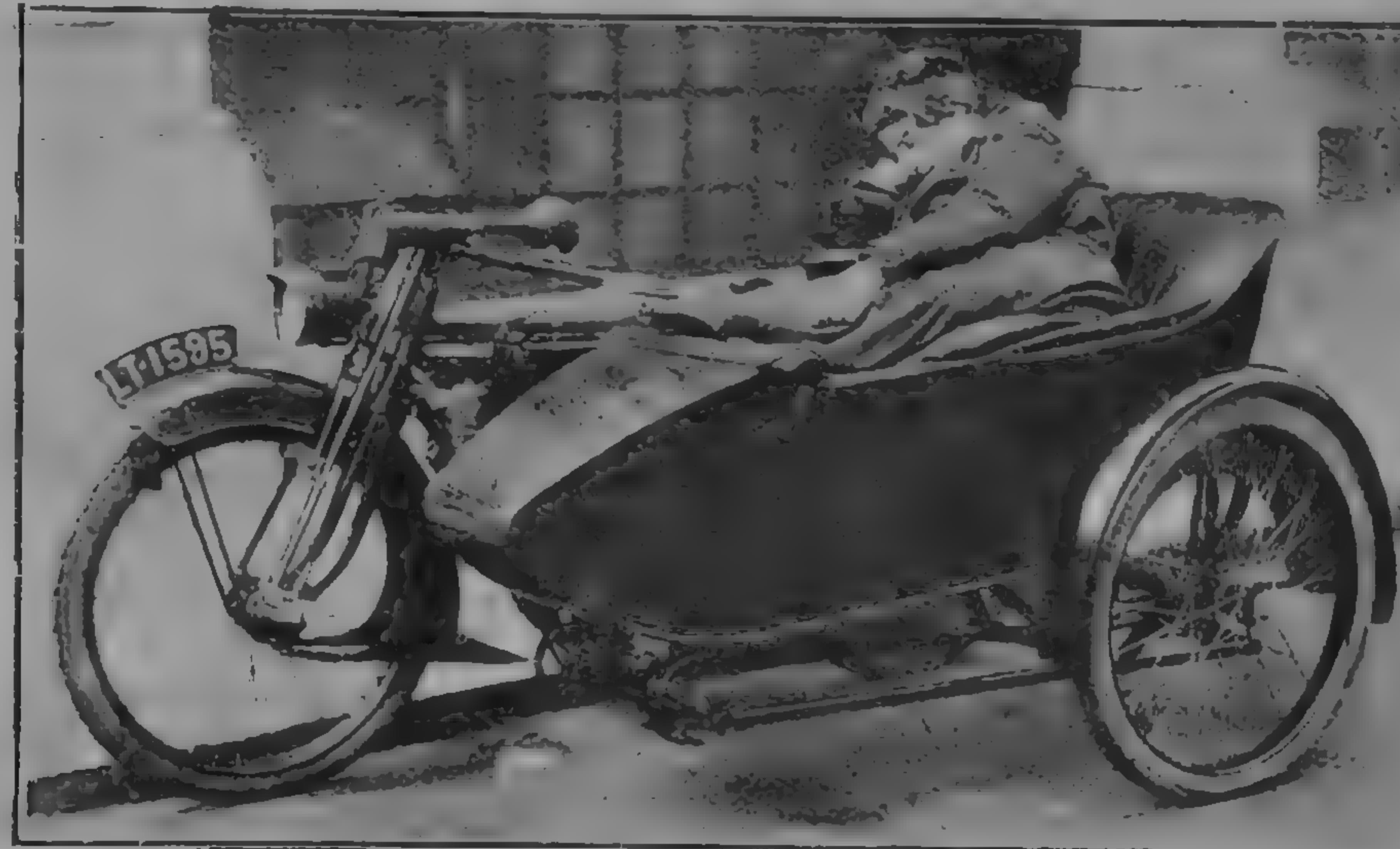
As a constant reader of MOTOR CYCLING, I have been very much interested in the recent correspondence regarding the kick starter. During my work I ride various makes of machines; in the last ten days I have had three twins of from 5 h.p. to 8 h.p., the last being a J.A.P. model. So much depends upon knowing one's mount; given that such is in first-class order, and once one is used to the control levers I do not think there is much difficulty in starting, at least, with the twins.

Another point of interest is that of the size of the wheels on English motorcycles. There is much to be said in favour of the 28 in. wheel, especially on machines for the services, where a good road clearance is required. The tyre mileage would be longer and the small holes on the road would not be felt quite so much. At least one well-known English manufacturer is now fitting the larger wheel, but why is not the practice universal?

R.R.

Edgbaston, Birmingham.

[There are strong indications that 28 in. wheels will be fitted by a number of manufacturers after the war. It is, undoubtedly, a step in the right direction.—ED.]



Tired out after an arduous day's duty. An actual snapshot outside a Government office.

periods. I experimented in vain with different jets, tuning, valve springs and sparking plugs. The machine was fitted with a Yankee magneto, and although the ignition seemed O.K., I finally decided to change it for a pre-war specimen of foreign manufacture. Immediately the material signs of overheating disappeared, and the plug breakages and heavy oil consumption ceased. Strange to say, however, the new magneto seemed to run as hotly as the defaulter.

If Mr. Oscar Hill's mount is fitted with a U.S.A. ignitor the above suggestion may give relief.

ARMED FORCES.

Dangers of Driving from the Sidecar.

I have been a reader of MOTOR CYCLING for a number of years, and wish to say a few words on the subject of driving from the sidecar. In the first place, the rider who drives a combination from the left hand side will not, in my estimation, come to much good. I say this because it is a dangerous practice on corners, as the machine itself is half-way round before the driver knows what traffic is about, and, being in a lower position when in the sidecar, he cannot hear so well as when seated on the saddle. Further, he is driving left handed. It would not be so bad if the rule of the road were "Keep to the right," but as the rule is the opposite, with the standard machine I do not see how driving from the sidecar will make much progress. I wish your paper every success.

Saltley, Birmingham.

W. GREEN.

A25

Overheating Topics.

It is a well known maxim that actual performance, and not theoretical principles, is the sole deciding test in most mechanical problems. In your issue of 18th June, I gave my own experiences of air-cooled motorcycle engines. In MOTOR CYCLING of 25th June, "J.W." classes them as being "unhappily exceptional." Here lies a straight issue which can only be decided by readers' experiences. I await their verdict with interest.

I might add, however, that these "unhappily exceptional" cases are not confined to the writer. A doctor of my acquaintance, whose mileage on a 1914 Douglas runs up to 40,000, has never once suffered from overheating, although his mount is fitted with draught-excluding mud shields. Furthermore, though the amount of direct air current impinging upon the cylinder of machines fitted with Entfield, A.J.S., Sunbeam and similar types of guards is practically negligible, I have yet to hear that they suffer from serious overheating.

As regards the "boiling" of car engines, though I have owned and driven a 12 h.p. De Dion for thousands of miles in the course of which the dreaded (?) following wind has frequently made its appearance, I most emphatically deny having ever experienced the resultant overheating referred to. At reasonable throttle opening it is impossible to overheat any properly tuned modern car, no matter what wind conditions prevail.

Mr. Oscar Hill asks for suggestions with regard to curing a small twin of overheating. In 1915 I possessed a popular 2½ twin which suffered from practically the symptoms he describes, viz., burnt out plugs, scorched trousers, and heavy oil consumption. After a 10-mile run the magneto and gear drive became so heated that it was impossible to put one's fingers to the wire terminals. In spite of this seeming overheating the machine ran perfectly, being capable of just over 50 m.p.h. between the plug breakage

Correspondence (contd.).

The Need for Motor Volunteers.

I have had many answers to the various paragraphs inserted in *MOTOR CYCLING*, referring to the need for Motor Volunteers, but the majority of inquirers seem to think we are out to give joy rides. This is not so; we are out for business in case of invasion. If I could offer a petrol permit and permission to use their machines to these inquirers I should have a very busy time enrolling them. Unfortunately, all that they can do at present is to take the oath, attend three drills a month, and make an occasional run to ensure that their machines are in order. In the event of an invasion it is more than probable that we should have many offers of help, but they would be of no value as we must be able to call our men up at a few hours notice and they must know what to do and how to do it.

The rate of remuneration for the use of a motorcycle when mobilized would be 15s. per diem for a period not exceeding 60 days, with usual pay allowances, etc.

I cannot understand a motorcyclist hanging fire over taking on this work. He has been lucky enough to miss the trenches; therefore I should have imagined that he would have been willing enough to guard the homes the men in the trenches have left behind.

KINGSLEY BAILLARD.

County of Middlesex Motor Volunteers
(Central Group),
Headquarters No. 5 Coy.,
406, Euston Road, N.W. 1.

[The pages of *MOTOR CYCLING* are always open to those responsible officials of Volunteer Corps wishing to appeal for additional members.—Ed.]

Overheating and the Small Twin.

Mr. Oscar Hill's description of the overheating trouble he has had with his small twin coincides with an experience of my own which I have long wished to submit to expert opinion. I started my career as a small twin user with the best of justification for faith, and I agree with "Armfrees" that overheating is not due to the fitment of shields, for before the war I rode a 2½ h.p. Douglas which I fitted with a large mudshield, extending across from footrest to footrest and underneath the machine, with only a small square cut to admit air to the front cylinder. This machine ran perfectly for the several years it belonged to me, with never a sign of overheating, although I did a lot of heavy touring work on it in hilly districts.

My next mount was a newer model of the same make, and with this mount I had the most persistent overheating for no apparent reason, scrapping plug after plug, although I tried all types, using absurd quantities of oil and sometimes not daring to drive at more than about 15 m.p.h., or the engine would quickly become almost red-hot and peter out. This machine had no mud protection beyond the usual wheel-guards fitted by the makers. When starting out, cool, it pulled like a demon, but any attempt to let it "all out" resulted in instant overheating. Sometimes, after plugging along steadily on the level for a couple of miles, say, at a slight rise or inadvertent pull-up it would suddenly lose all its power and refuse to pick up.

The war forced me to abandon this mount with the mystery unsolved, but I have long puzzled over my experience and should immensely appreciate an explanation tendered by some reader who has possibly had and overcome the same trouble.

HORIZONTALUS.

Sidcup, Kent.

OUR COMPETITIONS.

Plugs for Puzzling Problems.

THE percentage of correct solutions submitted for the last problem was surprisingly high. A *MOTOR CYCLING* Plug has been forwarded to Lce.-Corpl. D. B. Robertson, 22 Bank Avenue, Downfield, Dundee, whose solution was adjudged by the Editor as being not only correct but the most explicit.

Mr. Robertson writes:—

The trouble in this particular case was due to the failure of the exhaust valve lifter mechanism itself, due to dirt or derangement. I once had trouble similar to this on a 3½ Triumph. The machine had been stopped, and on restarting it was found that the spring of the exhaust valve lifter mechanism had become detached from the retaining stud at one extremity. When the lever was operated the valve was lifted, but on the lever being released the exhaust valve did not bed properly, due to the comparative stiffness of the lifter mechanism which the valve spring itself was not able to overcome. Thus the valve was never properly down on its seat and the mixture passed through the cylinder and was not fully compressed. The mixture then entered the hot silencer and was exploded spontaneously.

The Next Problem.

One of the famous *MOTOR CYCLING* Sparking Plugs will be awarded to the sender of the correct solution of the following problem which, in the opinion of the Editor, gives the most lucid explanation in not more than 250 words. Attempts should be marked "Plug" on the envelope, addressed to the Editor, and reach these offices not later than first post on Saturday, the 13th inst.

An old sidecar machine broke down on the roadside. A close examination showed that the valves were closing properly and their timing was correct. Ignition was all in order, so far as the timing went; the coil and accumulator were in order and there were no short circuits. The carburettor was an old type B. and B. The petrol flowed freely into the float chamber, and upon depressing the float petrol spurted through the jet, thus showing that all passages and orifices were clear. The engine would not fire except when petrol was injected through the plug orifice? What was the matter?

Driving from the Sidecar.

BELIEVING that driving from the sidecar would have many devotees, especially amongst the maimed or crippled, if a feasible and reasonable method of conversion were evolved, *MOTOR CYCLING* offers a prize of two guineas for what constitutes in the opinion of the Editor the most satis-

factory way of carrying out the necessary alterations. The conditions are simple. Competitors should select and name some known type of combination (such as Triumph motorcycle and Gloria sidecar or James motorcycle and Canoelet sidecar, etc.), and explain in detail just what mechanical additions and alterations they would employ to carry out the conversion. Rough sketches (dimensioned where possible), which will be redrawn by our artist, should accompany all attempts. Unsuccessful contributions, which, nevertheless, may be considered to be of sufficient interest to merit publication, will be paid for at our usual rates. Attempts should be marked "Sidecar" and should be addressed to the Editor, *MOTOR CYCLING*, 7-15, Rosebery Avenue, E.C. 1, so as to reach these offices not later than 31st July next.

"Win the War" Competition.

IN addition to the ordinary contributors' rates, we are offering three bonuses of £2 10s., £1 10s. and £1 respectively for articles selected as being the best of those submitted and appearing in *MOTOR CYCLING* up to and including the issue of 30th July. These articles should preferably be of topical interest and suitable for illustration. Contributions must be clearly marked "Win the War Article" on the MS., and addressed to the Editor.

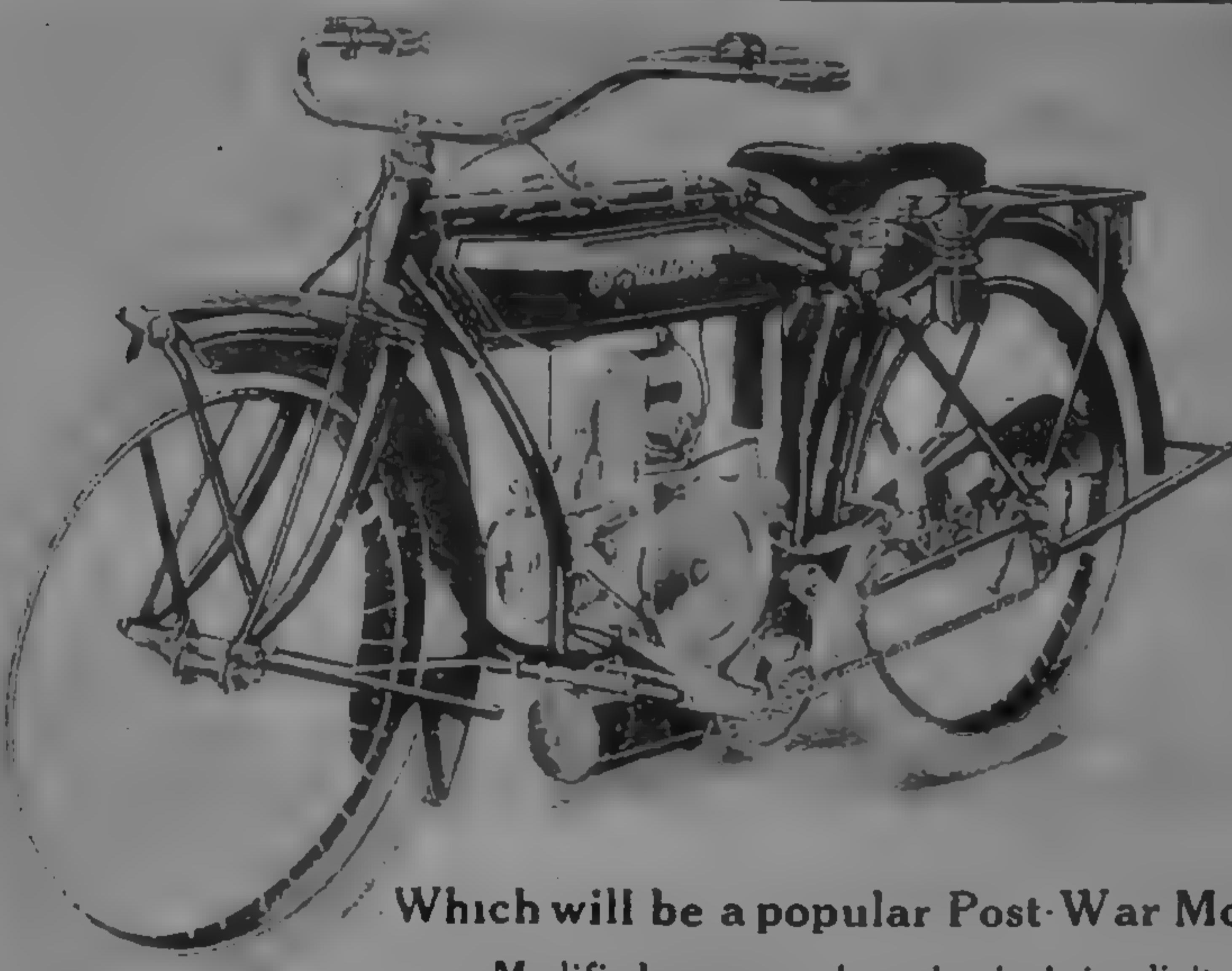
Ten-shilling Note Competition.

A *MOTOR CYCLING* 10s. note (franking the purchase of goods to this amount from any advertiser in our pages) will be awarded to the sender of the article which, in the opinion of the Editor, deals best with the subject "My Most Interesting Experience in the Service of the Government." This should give an excellent opportunity to despatch riders, both at home and abroad, of describing their doings. Contributions should be limited to 350 words. The closing date will be 30th July. Attempts should be marked "Government," and addressed to the Editor.

ENEMY ADVERTISING.

This Journal is conducted in the interests of British Industry and of commercial and technical intercourse between the British Dominions and friendly Nations. Subject to the conditions of Peace, its pages will not be available for assisting the recovery of markets for German and Austrian goods.

1918

*Indian*LIGHT
TWIN.

Which will be a popular Post-War Model.

Modified power and mechanical simplicity
are embodied in the Light Twin.

We regret that we are not in a position to supply motorcycles at the present time. But we can send 1918 abridged descriptive list on application.

This applies to Great Britain only.

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SKILL

The Indian's perfect mastery in the handling of his canoe is an example of what can be accomplished by practice. One miscalculation, and his frail bark would be smashed on the rocks, and himself hurled to destruction.

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Motorcycle Tyres

also furnish an instance of the perfection in technique that can be obtained by arduous and constant research.

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MOTOR CYCLING MART

NOTICES.

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of all kinds are inserted in this Section at 17s. Od. per inch, single column. Terms for a series or for larger spaces on application.

MOTOR-BICYCLES.

—A.J.S. 1916 6hp combination, Lucas dynamo and lamps, spring seat, spare wheel, very smart, £97 10s. Farrar.

—A.J.S. 1915 6hp combination, spare wheel, Lucas lamps, Cowey speedometer, extra smart, £87 10s. Farrar.

—A.J.S. 6hp combinations. We have 5 in stock. If you wish to buy, sell, or exchange your A.J.S., write us. Farrar's Motors, Hopwood Lane, Halifax. 451-4709

—A.J.S. 2½hp motorcycle, 1915 model, 3-speed, chain drive, in good order, owner abroad, price £40. Arthur Crofton, 1 King St., South Shields. 454-499

—A.J.S., 6hp, late 1913, 2-speed, kick starter, Turner c-b. sidecar, good condition, spares, tools, good covers, tubes, etc., £45. A.K., 30 Leathwaite Rd., Clapham Common, S.W. 451-4780

—A.J.S., 1916, 4hp, twin, 3 speeds, dropped frame, kick start and clutch, all accessories and absolutely like new, a bargain, £67. Maudes', 100 Gt. Portland St., London, W. 1. Telephone, 552 Mayfair. 451-4978

—ALLONS, immediate delivery 1918 models. W. P. Edwards, Taunton. 451-391

—ALLON, 2½hp, 2-speed, 2-stroke, new August, 1917, little used, 37 guineas. 27 All Saints Rd., Ipswich. 451-4778

—BRAKBURY, 3½-4hp, 1913 motorcycle and Canoelet sidecar, N.S.U. 2-speed gear, just overhauled by agents, in perfect running order, price £30, owner joined up. Trial at Beckley and Co., Central Garage, Dudley Rd., Brerley Hill. 452-4791

—BRAKBURY, late 1913, 4hp, 2-speed, belt drive, with coach-built sidecar, £55. H. Stoker, Benwick, March, Cambs. 451-4781

—BROWN motorcycle, fitted with 1915 overhead valve, twin 1-5 engine, free engine, new tyres, £18 10s. 13 Bendon Valley, Wandsworth, S.W. 451-4773

—BROWN, 3½hp, O.H. magneto, B. and B., spring forks, low built, splendid order throughout, bargain, £10 10s. Appointment, 24 Stratford Rd., Acton. 451-4773

—B.S.A., 1914, 4½, best sidecar, chain drive, new condition, £60. Write, 2 Wellmeadow Rd., Lither Green. 451-4759

—B.S.A., 1916, and sidecar, 4hp, chain-cum-belt, lamps, etc., good condition, £55. E. G. and Co., 15-16 Bishopsgate Ave., Camomile St., E.C. 3. 451-401

—CALTHORPE, 1916 combination, 4hp, twin J.A.P. engine, Enfield 2-speed gear, in splendid condition throughout, £50, or exchange for power. 136 Lavenham Rd., Southfields, S.W. 18. 451-4796

—CALTHORPE, 1916, 2-stroke, lamps and horn. £30. Parker and Son, St. Ives, Hunts. 451-400

—DOUGLAS. Send your order to Gourlay, the great Douglas Agent, Fellowfield, Manchester. 463-4938

—DOUGLAS motorcycles. We can supply by return 1918 models on receipt of permit. Eli Clark, The Douglas Agent, 196 Cheltenham Rd., Bristol. 222-277

—DOUGLAS, 2½hp, T.T., 2-speed, in running order, new Dunlops. £26 10s., must sell, worth £32. 136 Lavenham Rd., Southfields, S.W. 18. 451-4760

—DOUGLAS, 1918 model, prompt deliveries on permit. W. P. Edwards, Taunton. 451-390

—DOUGLAS, 1917, 4hp, models A and B; 2½hp model W; also U and V, 1916 specification, absolutely new; immediate delivery against priority permit for doctors, farmers, war and munition workers. How and where to apply, full particulars, write, Douglas Specialists, Robinson's Garage, Green St., Cambridge. 451-387

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—ENFIELD combination, 8hp, 1915. All condition and appearance, complete equipment, offers. W. P. Edwards, Taunton. 451-389

—ENFIELD, 1915, 3hp, 2-speed, perfect, £32. E. G. and Co., 15-16 Bishopsgate Ave., Camomile St., E.C. 3. 451-403

—F.N., 2½, lightweight, shaft drive, 2 speeds, free engine, hand control, clutch in splendid order, just been overhauled, bargain, £16 10s. 24 Granard Rd., Wandsworth Common, S.W. 12. 451-4772

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—HARLEY-DAVIDSON, 1915, electric model, and new sidecar, recently overhauled by makers, £65. Long, 21 Guy Rd., Beddington. Write first for appointment. 451-379

—HARLEY-DAVIDSON. Maudes' Motor Mart are buyers for spot cash of 1916 and 1917 models, with or without sidecars. Good prices for sound machines. 100 Gt. Portland St., London, W. 1. 451-413

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DEPOSIT SYSTEM.—The intending buyer forwards to our office the amount of the purchase money, which will be acknowledged to both parties. Notes or Money Order save time. Money Orders should be made payable at the Money Order office, at 114, Farringdon Road, E.C., and drawn in favour of Temple Press Ltd. Cheques must be made payable to Temple Press Ltd., and are acknowledged to seller when "cleared." If a sale is concluded, we forward to the seller the amount agreed upon. If no sale is made, we return the amount deposited. In either case we deduct a commission of 11% (3d. in the £, minimum 2/6) on the amount deposited, to cover our expenses of booking, postage, etc. Carriage is to be paid by the buyer. If the article is returned, each party pays one way. The risk of damage in transit is the seller's. Articles on approval are not to be retained more than three days, unless by arrangement between the parties. All disputes to be settled by the arbitration of the Editor of "MOTOR CYCLING," whose decision shall be final and binding on both parties.

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—J.A.P., 1914, 5-6hp combination, lamps and horn, 3-speed, kick starter, good condition, £38 or offers. Parker and Son, St. Ives, Hunts. 451-382

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— **RUDGE**, 3½-hp, 161 Man model, with dropped tube, just thoroughly overhauled and in condition like new, bargain, £38. Maude's, 100 Gt. Portland St., London, W. 1. 451-412

— **RUDGE**, 3½-hp, 2 speeds, tyres, etc., excellent, £25, nice appearance. W. P. Edwards, Taunton. 451-393

— **RUDGE-MULTI**, almost new, only ridden few miles, 3½-hp, magneto, lamps, mechanical horn, 6 guineas; exchange lightweight. Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 451-4793

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— **SUN**, 2½-hp, 1916, 2-stroke, V.T.R. engine, 2-speed, perfect condition throughout, £30 or near. Western Motor Works, Chislersurst. Phone, Sidcup 160. 452-383

— **SUNBEAM**. Maude's Motor Mart are cash buyers for late Sunbeams, singles or twins, solo or sidecar outfits. 100 Gt. Portland St., London, W. 1. 451-409

— **TRIUMPH** motorcycle, 3½-hp, recently been overhauled and in perfect running order. Can be seen at the Lothian Motor Works, 5 Lothian Rd., Camberwell New Rd., S.W. 9. 451-235

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— **TRIUMPH**, 1911, 4hp combination, Millford coach-built sidecar, 3 speeds, lamps, horn and speedometer, only done about 1000 miles and as new, £52. 1914 countershaft model, Sturmey gear and kick start, lamps and horn, £55. Baby Triumph, 2-stroke, 2 speeds, 1915 model, all accessories, £37. Another 1916 model, in better condition, £40. Another 1916, 2-stroke, £38. Maude's Motor Mart, 100 Gt. Portland St., London, W. 1, are buyers of all late-model Triumphs for spot cash. 451-410

— **TRIUMPH**, 1910, perfect, any trial, lowest cash £12 10s. 97 Sheffield Rd., Barnsley. 451-0788

— **TRIUMPH**, T.T., 3½-hp, perfect condition throughout, £25. Elce and Co., 15-16 Bishopsgate Ave., Camomile St., E.C. 3. 451-103

— **WILLIAMSON** 1914 combination, 8-10, water-cooled Douglas engine, lamp, hood, screen and tools, in first-class condition, £70 or near offer. Mepsted, King's Head, South Ockendon, Essex. 451-0768

— **ZENITH**, late 1915 Zenith combination, Gradua, fitted with special 3½-hp J.A.P. engine, very reliable and fast, any trial run, £47 10s. Edwards, 89 Wigmore St., London, W. 1. Mayfair 283. 451-385

— **ZENITH-GRADUA**, 1915, 4hp twin, T.T., £36; exchange entertained. 5 Victoria Ave., Surbiton. 451-0782

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— 1914 2½-hp A.J.S., 3-speed countershaft, £40.

— 1914 2½-hp ENFIELD, 2-speed, all-chain drive, £35.

— 1916 2hp CONNAUGHT, 2-stroke, £26. 154-6 Gt. Portland St., W. 1. Tel., 3426 Mayfair. 451-406

— 1916 INDIAN Powerplus electric combination, £90.

— 1916 INDIAN Powerplus electric combination, £87 10s.

— 1916 6hp ENFIELD combination, in good order, £73 10s.

— 1915 INDIAN, 3-speed, solo, £55.

— 1915 HARLEY-DAVIDSON combination, £60.

— 1915 BABY LEVIS, disc wheels, like new, £21.

— 1911 INDIAN 2-speed combination, £50.

— 1915 4hp B.S.A. combination, £50.

— 1913 3½-hp RUDGE-MULTI, £20.

— 1913 2½-hp DOUGLAS, 2-speed, £33.

— 1914 6hp SUNBEAM combination, £65, A1 condition.

— 1914 3½-hp NEW HUDSON 3-speed combination, £37 10s.

— 1913 3½-hp NEW HUDSON, 3-speed and sidecar, £32.

— 1913 ROVER, 3-speed, solo, £33.

— 1913 ARNO, 3½-hp, 3-speed, and sidecar, £24.

— 1913 6hp REX and coach-built sidecar, £15.

— 1912 6hp REX, solo, 2-speed, £20.

— 3½-hp BROWN, 2-speed N.S.U., £19 10s.

— 1912 2½-hp DOUGLAS, 2-speed, in splendid order, newly channelled, £25.

— To officers and soldiers on leave. Please note that we do not let on hire motorcycles, but we are prepared to sell you a machine and repurchase same at a given fixed price when your leave is up, providing that the machine is in good running order.

— All the above machines are guaranteed in the best of order and sent on approval-deposit. Remember that when you buy a machine from us we have all spare parts in stock should at any time you require them. Jones's Garage, Broadway, Muswell Hill, London, N. 10. Phone, Hornsey 2562. 451-413

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They are reliable, because each and every machine is dismantled and thoroughly overhauled before re-sale.

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— **A.J.S.**, immediate of military model, 700 by 80 tyres, detachable wheels, £91 6s.

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— **ENFIELD**, 3hp twin, 66 guineas. Touring and T.T. models in stock.

— **NEW IMPERIAL-J.A.P.**, 8hp, 3-speed, military combination, in stock, 109 guineas.

— **NORTON** "Big Four," all-chain drive, £82 10s., in stock.

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— **JAMES**, 1915, 2½-hp, 2-stroke, 2 speeds, excellent condition, £32. See below.

— **JAMES**, 1915, 2½-hp, 2-stroke, 2 speeds, lamps, and horn, £36. See below.

— **JAMES**, 1917, 2½-hp, 2-stroke, 2 speeds, lamps, and horn, £40. See below.

— **JAMES**, 1915, 4½-hp combination, 3 speeds, clutch and kick-starter, all-chain drive, £60. See below.

— **ROYAL ENFIELD**, 1910, 2½-hp, 2-stroke, 1 speeds, lamps, and horns, £38. See below.

— **ROYAL ENFIELD** combination, 1916, 6hp, lamps, horn and speedometer, £78. See below.

— **DOUGLAS**, 1910, 2½-hp, lamps and horn, £15. See below.

— **DOUGLAS**, 1913, 2½-hp, model V, headlight, rear lamp and horn, £28. See below.

— **DOUGLAS** combination, 1915, 4hp, Lucas lamps and horn, Stewart speedometer and warning signal, £63. See below.

— **WOLF-J.A.P.**, 1915, 2½-hp, countershaft, 2-speed gear, £20. See below.

— **ALLON**, 1915, 2½-hp, 2-stroke, excellent condition, £25. See below.

— **ALLON**, 1916, 2½-hp, 2-stroke, excellent condition, £30. See below.

— **ALLON**, 1917, 2½-hp, 2-stroke, 2 speeds, £40. See below.

— **CALTHORPE**, 1915, 2½-hp, 2-stroke, 2 speeds, lamps and horn, £27. See below.

— **TRIUMPH**, 1910, 3½-hp, T.T. model, speedometer, £20. See below.

— **PREMIER**, 1913, 3½-hp, countershaft gear and clutch, fitted with coach-built sidecar, £38. See below.

— **PREMIER**, 1913, 3½-hp, and tradesman's side-carrier, 3 speeds, clutch and starter, £50. See below.

— **PRECISION**, 1915, 4hp twin, 2-speed countershaft gear, £35. See below.

— **CLYNO** combination, 1911, 6hp, hood, screen, detachable wheels and spare wheel, complete, lamps, horn and speedometer, £62. See below.

— **ALL** the above motorcycles are ready for immediate delivery and deferred payments can be arranged for any of them. Write for further particulars and list C. 53 to the Eastern Garage Co., 91b Romford Rd., Forest Gate, E. 7. Telephone No., East Ham 490. T.A., "Egaraco, London." 451-415

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CARS, DUOCARS, TRI-CARS, TRICYCLES, Etc.

— **WANDSWORTH MOTOR EXCHANGE**. Great bargains in smart light cars, motorcycles and combinations taken in part exchange. Below.

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— **WANDSWORTH**. 1915 Numberette, magneto 2-seater, 8-7, water-cooled, magneto, hood, screen, lamps, overhauled, repainted new, 115 guineas, combination part. Below.

— **WANDSWORTH**. Baby Peugeot, famous little 2-seater, 4-cylinder, magneto, hood, screen, 85 guineas. Below.

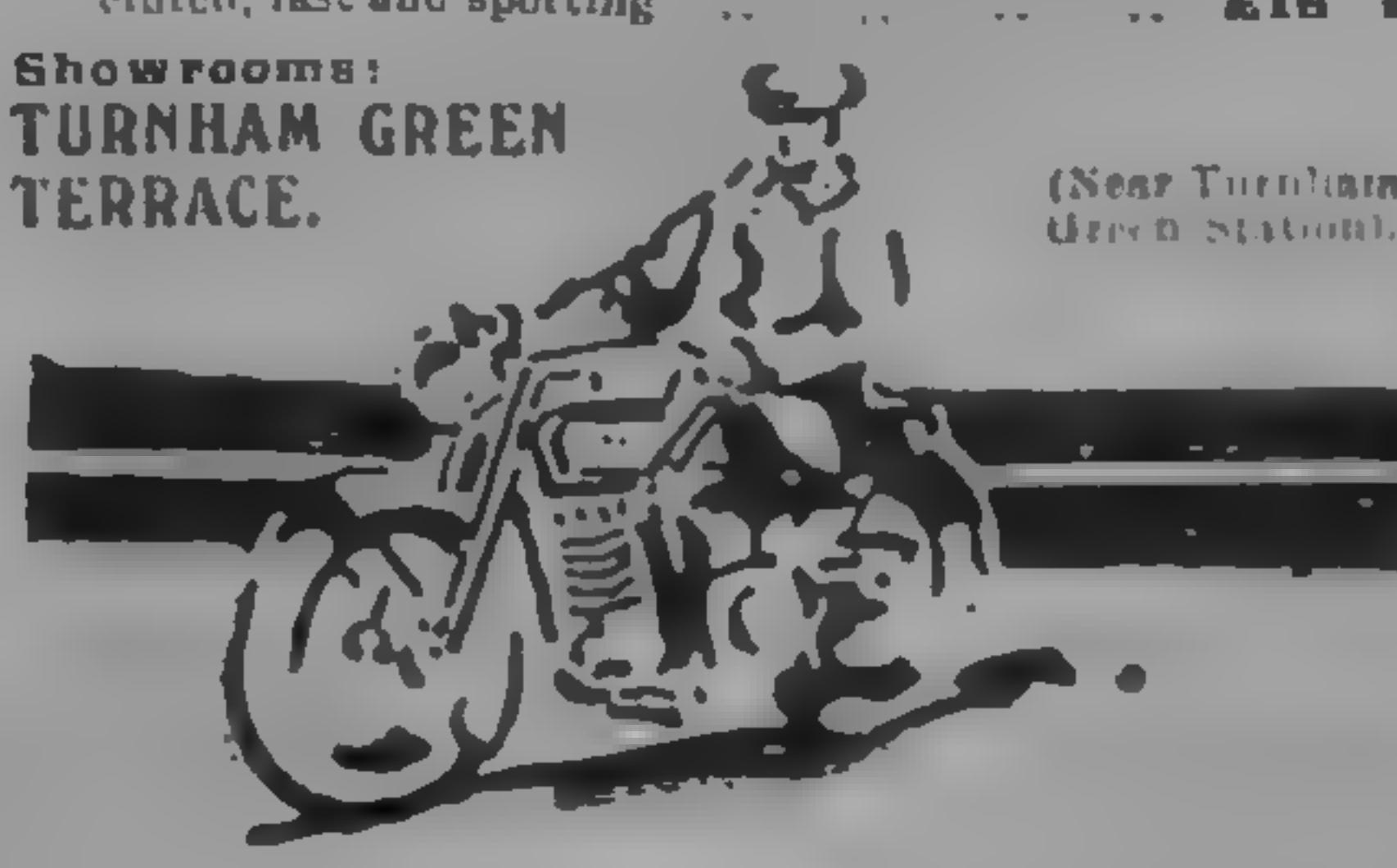
— **WANDSWORTH**. 1914 Crescent, lovely torpedo 2-seater, 8-10, magneto, hood, screen, overhauled, nicely painted dove, 85 guineas, combination part. Below.

— **WANDSWORTH**. 1914 Numberette, beautiful streamlined 2-seater, 8-7, magneto, hood, screen, lamps, speedometer, any trial, 75 guineas, combination part. Below.

— **WANDSWORTH**. Phoenix, smart torpedo 2-seater, 8-10, magneto, hood, screen, 5 lamps, speedometer, Stepney, price 85 guineas, combination part. Below.

— **WANDSWORTH**. 1911 Numberette, splendid 2-seater, 8-7, magneto, hood, screen, lamps, nice little car, 68 guineas, combination part. Below.

(For address see next page).



Showrooms:
TURNHAM GREEN
TERRACE.
(Near Turnham Green Station).

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being practically unavailable until the end of the war, we are, for the present, undertaking the complete renovation of a portion of our stock. The undermentioned machines have been completely stripped, overhauled, new parts fitted where required, and have also been completely stove-enamelled and plated. That is to say, that for a very moderate figure, you are getting a machine that is NEW in condition and NEW in appearance. These machines are completely equipped with head and tail-lamps, generator, horn, and tool-kit, and are guaranteed for 6 months, instead of for the usual 3 months. Fullest enquiries invited. Further lists will appear from time to time.

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1. Allon , 1916, 2½ h.p., 2-sp., 2-str. 32 gns.	19. New Hudson , 1916, 2-sp., 2-str. 28 gns.
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3. British Excelsior , 1916, 8-sp., clutch, 2-stroke 11 gns.	15. O.H.-Jap , 1916, 2½ h.p., 2-speed, clutch 27 gns.
4. Campion , 1916, 2-speed, 2-stroke 27 gns.	16. Royal Ruby , 1916, single-speed, 2-stroke 21 gns.
5. Clyno , 1916, 2-sp., clutch, 2-str. 29 gns.	17. Rudge Multi , 1914, 3½ h.p., clutch, kick-start 32 gns.
6. Douglas , 1914, 2½ h.p., 2-speed, clutch and kick-start 36 gns.	18. Scott , 1914, 8 h.p., 2-speed, clutch, kick-start 36 gns.
7. Douglas , 1914, T.T., 2½ h.p., 2-sp. 36 gns.	19. Wooler , 1916, 2-speed, 2-stroke, spring frame 29 gns.
8. Douglas , 1915, 2½ h.p., 2-speed, Binks, special engine 41 gns.	20. Zenith Gradua , 1918, 1 h.p., standard 37 gns.
9. Enfield , 1916, 1 h.p., 2-speed, clutch, kick-start 42 gns.	21. Zenith-Gradua , 1914, 4 h.p., standard 32 gns.
10. Indian , 1916, 7½ h.p., T.T., clutch, disc wheels 45 gns.	
11. Indian , 1916, 7½ h.p., T.T., clutch, new sporting sidecar 55 gns.	
12. James , 1914, 4½ h.p., single-speed 29 gns.	

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Do not forget we hold a stock of 40 Sporting and Light Cars. We invite Country Clients to take advantage of "Motor Cycling" Deposit System.

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—**WANDSWORTH.** Barracq 4-seater, 15hp, 4-cylinder, magneto, 3 speeds, reverse, nearly new, tyres, any severe trial, 38 guineas. Below.

—**WANDSWORTH.** Any above cars purchased on easy terms. Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). Phone: Battersea 327.

—**1914 MORGAN**, J.A.P. engine, disc wheels, any trial, £47 10s. 97 Sheffield Rd., Barnsley. 451-8783

—**CYCLECARS.** Anyone wishing to buy a new or second-hand cyclecar should refer to "The Light Car and Cyclecar," the journal of the new motorizing, in which examples of all the best-known makes are offered for sale. "The Light Car and Cyclecar," 2d. weekly, 7-15 Rosebery Ave., London, E.C. 1. 451-824

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ENGINES AND FITTINGS.

—**1914 LINCOLN-ELK** 3½ engine, complete with Bosch waterlight magneto, B. and B. carburettor, £8 10s. 1 Boswell St., Radford, Nottingham. 451-8768

EXCHANGE.

—**IF** you are wanting to do an exchange, send for our list of new and second-hand motorcycles. The North Wales Motor Exchange, Holt St., Wrexham. 451-8788

—**MATCHLESS** or Rudge combination for 2½, 4 or 6hp A.J.S., cash adjustment either way. Youlgs, St. Lucia, Sandhurst, Berks. 451-8690

—**ANY** make of motorcycle taken in part exchange for light car; or light cars taken in exchange for motorcycles. Service Co., 292 High Holborn, W.C. 1. 451-8777

—**EXCHANGE** upright piano, new condition, for good motorcycle, sell £34, cash adjustment, or combination. 113 Blair St., Poplar, E. 14. 451-8774

PRICES OF



WE regret that owing to the increase in cost of raw materials, labour, tins, etc., we are compelled to make the following advances in prices as from 1st July, 1918:

Robbialac Enamel.

	2/- tins	9d.	Extra for packing and postage.
For Cycles	2/- tins	9d.	
Motorcycles ...	2/6 ..	1/-	
Tricars	5/- ..	1/-	
4-seater Cars ...	9/3 ..	1/4	
Large Motor Cars 18/- ..		1/9	

Robbialac Brushes.

Robbialac Brushes	1 in.	1/3	4d.	Extra for packing and postage.
"	1½ in.	1/8	..	
"	2 in.	2/4	..	
"	2½ in.	2/9	..	
"	3 in.	3/8	..	

Sold by all accessory dealers.

Sole Manufacturers of Robbialac :
Jenson & Nicholson, Limited,
Stratford - - - London, E. 15.

—**MOTORCYCLE** wanted, exchange latest £25 model, large cabinet, hornless gramophone, private. Box No. 3666, c/o "Motor Cycling." 451-8797

EXTENDED PAYMENTS.

—**EXTENDED** payments; all makes supplied; lowest terms. Service Co., 292 High Holborn, London. 451-8797

451-8797

INSURANCE.

—**DREADNOUGHT** motorcycle policies at Lloyd's. Low premiums by monthly payments. Before insuring elsewhere write for prospectus issued solely by Roys, Ltd., 199 Piccadilly, London. Telephones, Regent 5878 9. 451-8797

MAGNETOS.

—**REPAIRS** and spare parts. The Ronbaken Magneto Co., Ltd., Camp St. Works, Manchester. Telephone, 8266 City (3 lines). Telegrams, "Rumben, Manchester." 451-847

—**E.I.C.** magnetos, new, £5. City Motor Co., 125 London Rd., Manchester. 451-995

—**REPAIRS** by manufacturers. Kenyon and Torrance, 389 Gt. Western St., Rusholme, Manchester, can now undertake magneto repairs accompanied by Class A or B certificate. Same can receive immediate attention, and be returned without delay. 468-369

—**MAGNETO** repairs of every description. We are late from the Bosch works, and are entirely British, and give same guarantee at lowest possible prices. We have a large stock of single, 2-cylinder and V-type magnetos, suitable for all purposes, guaranteed and sent on approval against cash. Magnetos bought or taken in part payment. The Magneto Repairing and Winding Co., 158 Seymour St., London, N.W. 1. Telephone, Museum 1158. Telegrams, "Kumagnelec, Norwest, London" 451-6215

—**NEW** £6 high-tension magnetos, single, variable ignition, £2 19s. 6d. Booth's Motories, Halifax. 451-8797

MISCELLANEOUS.

—**PHOTO**, postcards of yourself, 1s. 3d. dozen; 12 by 10 enlargements, 8d.; gaslight postcards, 1s. 6d. 100. Plates cheap. Samples, catalogue free. S. E. Blackett, July Rd., Liverpool. 451-869

—**72 NUTS**, screws, washers, etc., assorted lots; for motor and motorcycle repairs, 2s. 6d., post free. Other lots from 1s. to 24s., lists free. Eric Meadows, Bankfield Lane, Southport. 451-8797

—**"MOTOR CYCLING MANUAL."** The handbook that every motorcyclist—novice and expert—has been waiting for. Post free 1s. 3d. on paper, from "Motor Cycling" Offices, 7-15 Rosebery Ave., London, E.C. 1. 451-8797

—**PULLEYS** for any motor, fixed 7s. 6d., adjustable 18s., plated, guaranteed carriage paid. Perkins and Son, 455 High Rd., Leyton. Phone, 248 Walthamstow. 455-8263

5,000,000 NEW bright-steel engineers' hexagon bolts, nuts, studs, metal screws available; send 10s. for parcel of 250 assorted useful sizes. Whitworth, Metric, B.S.F., B.A. threads, guaranteed perfect goods; sent carriage paid. Write for full catalogue. Palmer's Garage, Tooting. 454-990

—**BANCROFTIAN CO.** The most reliable and cheapest house in the United Kingdom.

—**TYRES.** Don't buy any until you have seen our special list of high-grade clearance tyres at less than half manufacturers' prices. In stock: Kempshall, Pedley, Clincher, Beldam, Hutchinson, Stelastic, Goodrich, etc. Tubes from 3s. 6d. Write for list at once. We have the largest stock of tyres in London.

—**BELTING.** Well-known make rubber, 7s. 1s. 4d. foot. We have also a few short lengths to clear.

—**WATERPROOF** overalls. Highest class at pre-war prices. List per return. Don't buy any until you have seen it.

—**MAGNETOS** in stock. Bosch, Dixie, etc. Repairs; spares at lowest price.

—**CHAINS**, 6 by 3½ Renold's, 5 ft. lengths, £2 8s. 6d.; Coventry, £2 6s.; 6 by 1½ Perry, 6s. 9d. foot; Coventry, 7s. 3d.; Renold's, 8s. Above now, not laked; limited quantity. When sold, cannot repeat. Postage 6d.

—**SPEEDOMETERS.** Stewart, etc. We stock everything for motorists. Send your inquiries to us.

—**CARBURETTERS.** Brown-Barlow, 1917, absolutely new, not laked, complete, standard, heavy, 35s., usual 45s.; lightweight, 32s. 6d.; with pilot jet, variable, lightweight, 35s.

—**XL-ALL** saddles, largest, brand new, 35s., usual 45s.

—**BANCROFTIAN CO.**, 64 Bishopsgate, London, E.C. T.A. : "Chaikel, London." Tel. No. 9897 London Wall. 451-8797

—**FLINTS** for pocket lighters—round, 1s. 9d. dozen; 3 dozen 1s.; square, 2s. 3d. dozen; wheels, 4½d. each. Ridlington, 201 Southampton St., Cambridge.

—**ORTO** windscreen, 4 patterns, from 31s. 6d.; Orto hoods and aprons, guaranteed waterproof. Lists gratis. Atkinson's, 21 Arminger Rd., Shepherd's Bush, W. 1. 451-8794

—**WRITE** for list of combinations and solo mounts from £14 to £75 which can be had on easy payments at cash prices; free storage till required. Youngs, The Parade, Kilburn, N.W. 6. 451-8799

—**LUCAS** headlamp and generator, King's Own, No. 454, perfect, 30s. or offer. Foxall, 11 Warren Rd., Reigate, Surrey. 451-8794

LAMB'S

For BARGAIN EXCHANGES
and LIBERAL ALLOWANCES

LAMB'S
for
PEDAL
CYCLES



New Machines.

CALTHORPE Co.'s gent's roadster, 2 or 3-sp., Dunlop tyres, gearcases, 22, 24 or 26 in.
CALTHORPE Co.'s lady's, 2 or 3-sp. gear, Dunlop tyres, 20, 22 or 24 in.
ARIEL, lady's Standard, 20, 22, 24 in.
ARIEL, gent's Standard, 22, 24, 26 in.
NEW HUDSON, gent's Royal Roadster, 21, 23, 25 in.
NEW HUDSON, lady's Standard.
NEW HUDSON, gent's Standard.
NEW HUDSON, lady's Royal.
RALEIGH, model E.
Juvenile Cycles, boy's & girl's, ex Raleigh.
ARIEL, R.R. 24 and 26 in.
SPARKBROOK, grand lightweight, chocolate finish, 26 in.
BROWN BROS., roadster, gent's, 26 in. £12 12 0

Second-hand Machines.

1 gent's TRICYCLE, 24 in. frame, with box 9 gns.
1 TANDEM, lady back, Chater Lea fittings £10 0
CYCLE, S-CAR for child... 5 10 0
Box Carrier 12 12 0

Second-hand Machines - Continued.

ARIEL, gent's 22 in., R.R.	£5 15 0
I RUDGE "Crescent" Racer, 26 in. frame, fixed gear	7 15 0
NEW HUDSON, 24 in., roadster, 3-speed	7 10 0
JAMES, 3-speed, 24 in., roadster..	10 10 0
BLIZZARD B.S.A., 27 in., 3-sp., roadster, Roman rims	10 10 0
Juvenile, roadster, 20 in.	5 0 0
ARIEL, tradesman's	9 15 0
Racer, 24 in.	5 10 0
PREMIER, 24 in. frame, 3-speed, R.R.	10 10 0
ROVER, gent's, 26 in.	6 gns.
Racer, B.S.A. fitting	4 10 0
B.S.A., 20 in., lady's, as new	11 11 0
B.S.A., 25 in., gent's	10 gns.

Ladies' Machines.

Our Own Model, as new	£9 9 0
ELITE, 22 in. frame, brand new tyres	11 11 0
VINDEX, 23 in., only soiled	10 10 0
SWIFT, 22 in.	4 15 0

And many others.

WANTED—HIGH-GRADE CYCLES.

High prices paid. No bargaining. Cash on sight. Proof ownership essential.

50 Motorcycles in Stock.

HARLEY, ENFIELD, INDIAN, ARIEL, JAMES, NEW HUDSON, CALTHORPE, LEVIS, RUBY, ROVER, MATCHIE'S, O.K., TRIUMPH, etc.

LAMB'S,

151, High St., Walthamstow, E. 17

Phone—Walthamstow 180.

50, High Road, Wood Green, N. 22.

Phone—Hornsey 1036. (Only depot in this district.)

11am to 9p.m. Thursdays 8p.m.

—CARBURETTERS. Brown and Barlow, A.M.A.C., Indian, J.A.P., 12s. 6d.; Douglas, 5s. 6d.; new Brown and Barlows, for heavyweights, lightweights or Douglas, 22s. 6d.; all handle-bar control. Booth's Motories, Hallifax. 452-a701

—ENGINES. New 1 1/2-hp Star, big single, with pedal-operated free-engine clutch, £9 15s.; new 2 1/2-hp Farm engine, hopper cooled, horizontal, 2 fly-wheels, magneto ignition, complete, ready for running, £22 10s., usual price £30 10s.; sets of castings for building same, £3 17s. 6d. Booth's Motories, Hallifax. 452-a702

—1911 LINCOLN-ELK frame, tank, Druid forks, 2-speed countershaft gear, 26 by 2 1/4 wheels, new Palmer tyres, handlebar, saddle, 2 brakes, £8 10s., will separate; see "Engines." 1 Boswell St., Radford, Nottingham. 451-a770

—NEW B. and B. lightweight carburettor, with pilot jet, 29s. 6d.; Morgan speedometer, out of order, 10s. 6d. 37 Sheffield Rd., Barnsley. 452-a789

—SCOTT forks with front brake complete, 25s.; front wheel, 7s. 6d.; front mudguard stays, number plates, 3s. 6d.; tank with taps, 10s. 6d.; windshields, 4s. pair; radiator, leaky, 7s. 6d.; pair footboards complete, 7s. 6d.; Brooks' padded saddle, 12s. 6d.; 60-bore cylinder piston and connecting rod valves, a.i.v., 7s. 6d.; Rudge cycle saddle, 2s. 6d.; 2 1/2-in. smoothing plane, 3s. 6d.; offers invited. King, Maythorpe, Gladstone Rd., Cheltenham. 451-a779

PATENT AGENTS.

—ADVICE and handbook free. King's Patent Agency, Ltd., 165 Queen Victoria St., London. 222 680

REPAIRERS.

—C. R. FOSTER, of Leeds, regrets being unable to undertake any more repairs until further notice owing to all available plant being engaged on war work. 222 487

—N.S.U. 2-speed gears. We execute repairs to these gears promptly, and supply replacements for all types. Ingles and Co., Acton Hill Works, Acton, London, W. 3. 457 631

—CYLINDERS reboared, new pistons, rings and valves, broken cylinders and crankcases, acetylene welding, all parts machined. A. Pilkington and Sons, 380 Michael Rd., Birmingham. 451-914

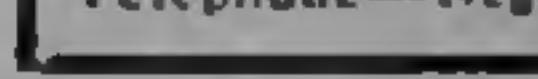
—GENUINE Sturmey-Archer parts. Sturmey-Archer countershaft gear repairs, every part in stock; repairs by gear mechanics only, all parts genuine Sturmey-Archer, no dod parts supplied; also every part in stock for hub gears, J.J.A. and J.S.; all Sturmey-Archer genuine parts, guaranteed. Jones' Garage, Broadway, Muswell Hill, N. 10. 451-416

IMPORTANT NOTICE TO MEMBERS.

THE ANNUAL GENERAL MEETING OF THE AUTOMOBILE ASSOCIATION and MOTOR UNION will take place at the White Room, Savoy Hotel, London, on Wednesday, 10th July, at twelve o'clock noon, to receive the report of the Committee and Directors, for the presentation and adoption of the accounts for the past year, and to elect members of the Committee and Directors and Auditors in place

of those retiring. FOR THE SAKE OF ECONOMY, COPIES OF THE REPORT AND BALANCE SHEET WILL ONLY BE ISSUED UPON REQUEST. WILL MEMBERS DESIRING COPIES THEREFORE KINDLY APPLY FOR SAME BY POSTCARD OR TELEPHONE TO THE HEAD OFFICE OR ANY OF THE BRANCH OFFICES.

STENSON COOKE, Secretary.
Head Office: Panum House, Whitcomb St., London, W.C. 2
Telephone—Regent 300. Telegrams—Panum, London.



—PISTON rings, high grade, low prices. Piston Rings, 30 Wigan Rd., Atherton. 461-a617

—STURMEY-ARCHER and Armstrong gear repairs a speciality; repairs only by experienced workmen; repairs in 12 hours when necessary. We quote you cheap and guarantee our work. Give us a trial. Recommended by all the leading firms; testimonials can be seen upon application; all gears are given a severe test before we despatch. Remember, we have the parts in stock, no waiting. Jones's Garage, Broadway, Muswell Hill. 451-417

SIDE-CARS, SIDECAR BODIES, TRAILERS, Etc.

—WE have several good second-hand sidecars to clear, cheap; send for particulars. The North Wales Motor Exchange, Wrexham. 222 923

—3 NEW latest underslung chassis, with all fittings, and tyre, £5 5s., usual price £8 5s.; 2 new £13 13s. underslung couch sidecars, £10 10s.; Montgomery £13 13s. couch sidecar, £6 5s.; Tee, elbow and clip lugs, 5d. each; front detachable joints, 1s. 6d. Booth's Motories, Hallifax. 452-a700

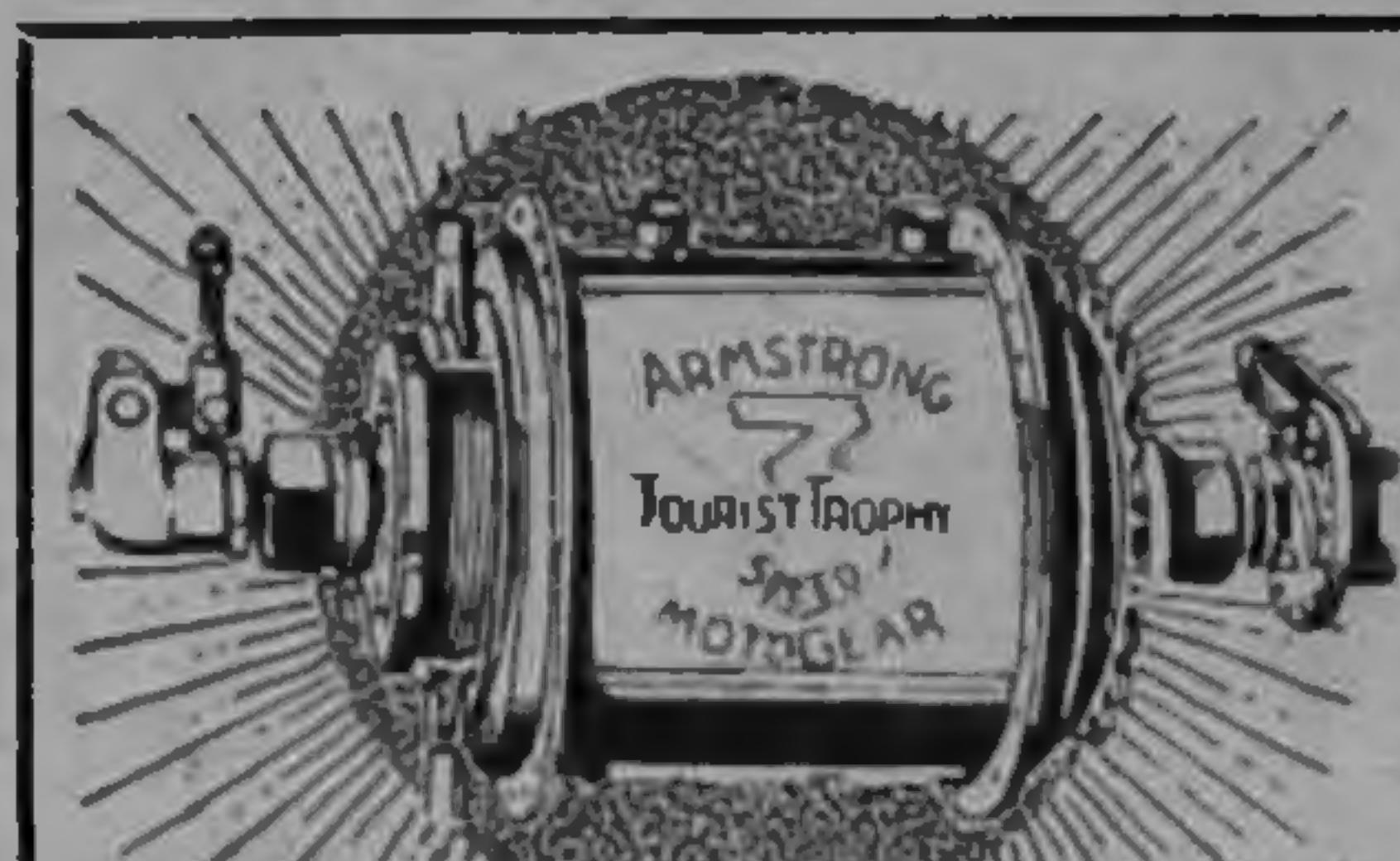
—BASTONE'S for sidecars and bodies at low prices. 228 Pentonville Rd., King's Cross, London, N. 1. Telephone, 2481 North. 151-100

SITUATIONS VACANT.

Defence of the Realm Act REGULATION 8 (b).

Under the above regulation, advertisements offering situations with firms whose works are situated within 30 miles of London and whose business consists wholly or mainly in engineering, shipbuilding, or the production of munitions of war, or of substances required for the production thereof, must contain the words—“NO PERSON ENGAGED ON GOVERNMENT WORK OR RESIDENT MORE THAN 10 MILES DISTANT NEED APPLY.”

When the advertiser's works are situated more than 30 miles from London all applications must be made through a Labour Exchange, by means of a box number allocated by the Board of Trade. Forms of application may be obtained from any Labour Exchange, or from the offices of this paper. Each advertisement must clearly state that no person already engaged on Government work need apply.



—STURMEY-ARCHER & ARMSTRONG GEARS repaired immediately. Every part actually in stock.

WE repair gears thoroughly, and give a road test. Send wheels, clearly labelled, to Hounslow L.S.W. Railway Station.

—COUNTY ENGINEERING Co.
64, Staines Road, Hounslow.
Phone: Hounslow 822. Grants. "Three pad, Hounslow."

WAUCHOPE'S

The Famous House for Bargains in Motorcycles, Sidecar Outfits.
Tradesmen's Carreras, Light Cars, etc. Cash, Credit, or Easy Terms.
Phone-Holborn 5777. 9, Shoe Lane, Fleet Street, LONDON, E.C. Grams—"Opificer, London."

SPARE PARTS.

—A.J.S. spares and repairs. Sole London and district agents, H. Taylor and Co., Ltd., Store St., W.C. 222-228

—A.J.S. spares, prompt delivery. A.J.S. Agent, Cyril Williams, B Dept., Chapel Ash Depot, Wolverhampton. 455-461

—INDIAN spare parts. We are dismantling this week 1913-14 7hp Indians. State your requirements, mentioning date, power and model of machine. Alexander's, 116 Colinton Rd., Edinburgh. 452-394

—WE can supply practically any part for the makes mentioned below:

—TRIUMPH, including cylinders and pistons and ball bearings.

—PREMIER cylinders and pistons, also a few other parts.

—J.A.P., 3½ and 4hp and 6 and 8hp.

—ENFIELD, 3½, including cylinders and pistons.

—ENFIELD, 6 and 8hp, including cylinders and pistons.

—B.S.A., 3½hp and 4hp valves complete.

—ARIEL, 3½ and 5hp, also gearbox parts.

—DOUGLAS, including gearbox parts.

—WE have also a large stock of ball bearings; state sizes required.

—N.S.U. 5hp engine, complete with magneto, induction pipe and 2-speed gear, in perfect order, a real find, £10 10s.; 3hp Enfield frame, new, £7; also a 3hp Enfield tank, £8 10s., new; 3hp Enfield front forks, £2 10s.; 11U4 Bosch magneto, as new, perfect, 4-cylinder, £10; several single-cylinder magneto from £3 10s., new; 1 free-engine hub with pulley, less controls, 5s. 6d., new; Norton cylinder, perfect, 35s.; a few large-size XL All saddles, new, to clear, 2s. each.

—WHATEVER your requirements, write Jones's Garage. Address below.

—IF in stock, a reply will be sent.

—WE have the largest stock of engine spare parts in the trade, and can supply almost any parts for J.A.P., Enfield, James, Triumph, B.S.A., Ariel, Douglas, Rudge, etc., etc.

—WE give prompt replies and quick despatch. Piston rings, bushes, etc., all sizes in stock. Douglas connecting rods, crankshafts, gearbox parts, valves, tappets, guides, cylinders, etc., etc.

—WE have now in stock 6 and 8hp J.A.P. connecting rods, also ball-bearing connecting rods, 6 and 8hp; 3½hp connecting rods, 6hp pistons, 4hp pistons, 6hp pistons, valves, guides, cams, cylinders, bushes, timing pinions, rings, 3½hp twin connecting rods, flywheels, crank rims, gudgeons, etc., etc.; 2 water-cooled J.A.P. cylinders, want machining, £2 10s. each. Jones's Garage, Broadway, Muswell Hill, London, N. W. Phone, Hornsey 2562. 451-419

SPARE PARTS—WANTED.

—THE Editor of "The Commercial Motor" will be pleased to be advised of any stocks of old type or obsolete commercial-vehicle spare parts, as well as of spares for those touring-car models which are commonly used for conversion to delivery vans, etc. Particulars should state types and principal parts available, and these will be included in the Spare Parts Bureau list published regularly in the editorial column of "The Commercial Motor." Letters should be marked "Spare Part," and addressed to The Editor, "Commercial Motor," Rosebery Ave., E.C. 222-228

TANKS.

—TANKS. Tanks made to order, repaired or enamelled; all-metal sidecar bodies; general sheet-metal work, lists free. Attwood's, 98 Rosebery Ave., E.C. Tel., Central 12445. 460-711

—TANKS of every description; repairs, re-enamelling. Write for booklet. Green, Water St., Blackfriars, Manchester. 483-836

EAGLES—N.S.U.

2-Speed Gears with Free Engine.

Acknowledged to be the most perfect of its type upon the market. With Adjustable pulley £7 17 6

Easy to fit. No alteration necessary to Motorcycle.

Supplied for Triumph, B.S.A., Bradbury, Rudge, Precision, Premier, Singer, Rover; other makes to order. Trade enquiries invited. Spares for N.S.U. Motorcycles.

EAGLES & CO. Acton Hill Works, Acton, Telephone: 650 Chiswick. LONDON, W.3.

TUITION.

MOTOR instruction. At the British School of Motoring you can learn motor mechanism, driving and repairs, for the lowest inclusive fee in England. Apply for prospectus, Secretary, British School of Motoring, Ltd., 5 Coventry St., Piccadilly Circus, London, W.1. 222-201

TYRES AND TUBES.

ELITE RUBBER CO., LTD. We have the following special clearance lines in motorcycle covers, belts, tubes, etc. These goods are quite new. Any article sent on 7 days approval against remittance. A 3s. outfit sent free of charge to all purchasers of covers and tubes as advertised on orders exceeding £1.

—ELITE. 26 by 2 Bates Wyvern, 25s., listed 36s.; No. 1 pattern medium, 22s. 6d., listed 38s.

—ELITE. 26 by 2½ Avon Sunstone, 39s., listed 58s.; tricar, 30s., listed 44s.; Stonehenge, 22s., listed 32s. 6d.

—ELITE. 26 by 2½ Avon Stonehenge, 24s., listed 33s. 3d.; Bates No. 1 special heavy, 39s., listed 57s.

—ELITE. 650 by 65 Avon heavy 3-ribbed, 37s. 6d., listed 53s.; Goodyear Diamond studded, fully guaranteed, 40s., listed 69s.

—ELITE. 26 by 2½ Bates No. 1 special heavy, 30s., listed 50s. 6d.; Kempshall heavy anti-skid, 19s. 6d., listed 37s. 6d.

—ELITE. 26 by 2½ oversize for 2½ rims, Bates special heavy, 35s., listed 53s. 6d.; Pedley extra-heavy 3-ribbed, 28s. 6d., listed 48s.

—ELITE. 26 by 3 Bates special heavy, 50s., listed 72s. 6d.; De Dion chain pattern, 45s., listed 62s.

—ELITE. 700 by 80 oversize for 650 by 65 rims, Goodyear Diamond studded, 55s., listed 79s., fully guaranteed, specially recommended for Enfield and other heavy combinations.

—ELITE. 26 by 2½ by 2½ Midland heavy ribbed and studded, 25s., listed 45s.

—ELITE. 24 by 2 Clincher de luxe, 16s.; 24 by 2½ Clincher heavy de luxe, 32s. 6d.

—ELITE. Best quality inner tubes, fully guaranteed. 26 by 2, 6s.; 26 by 2½, 7s.; 26 by 2½, 9s.; 26 by 2½, 8s. 6d.; 26 by 3, 9s. 6d.; 26 by 3, 10s.; 650 by 65, 11s.; butted, 1s. 6d. extra.

—ELITE. Best quality belts, cannot advertise name, 6 ft. lengths by 1 in., 7s. 6d. each; 6 ft. 6 by ½ in., 6s. 9d. each.

—ELITE. Pedal belts, any length, 1½ in., 2s. 6d.; 1 in., 1s. 6d. 1½ in., 1s. 6d. 1½ in., 1s. 6d.

—ELITE. Retreading. Extra heavy, 17s. 6d.; heavy, 15s.; medium, 12s. 6d. Time required, 7 days.

—ELITE RUBBER CO., LTD. Head Office, 321-3 High Rd., Streatham, S.W. 16. Phone, Streatham 1487. Also at 26 Vauxhall Bridge Rd., Victoria, S.W. 1, 1 minute from Victoria Station. Phone, Victoria 6553. Please address all communications to Head Office, Streatham. 222-182

—TYRES. See Bawerston advertisement under "Miscellaneous." 222-8

—SPECIAL clearance line, United States inner tubes, 26 by 3, brand new, 6s. 6d. each. Alfred Westrage, 65 Gt. Portland St., W. 1. 451-4518

—BASTONE'S. New clearance covers and tubes. As below.

—BASTONE'S. 26 by 2½ Pedley, heavy 3-ribbed, 25s.; Michelin Trident, 19s. 6d.; Kempshall heavy Anti-skid, 19s. 6d.; Shell, heavy, grooved, 15s.

—BASTONE'S. 26 by 2½ Honley, rubber-studded, 17s. 6d.; Gaulois rubber non-skid, 18s. 6d.; heavy twin ribbed, 26s.; Michelin, 20s. 9d.; Shell, 18s. 6d.

—BASTONE'S. 26 by 2 Gaulois rubber non-skid, 15s.; Michelin, 9s. 6d.; Michelin steel-studded, 20s.; Shell, 12s. 6d.; heavy twin, ribbed, 22s.

—BASTONE'S. 28 by 3 Gaulois heavy rubber non-skid, 45s.

—BASTONE'S. New Michelin 1918 guaranteed tubes (not clearance), 26 by 13s., 5s.; 26 by 2, 7s. 3d.; 26 by 2½, 8s. 3d.; 26 by 2½, 9s. 3d.; 28 by 2, 9s. 3d.; 28 by 2½, 10s.; butted, 1s. 9d. extra; special clearance line, 26 by 2, butted, 5s. 6d. 228 Pentonville Rd., King's Cross, London, N. 1. Telephone, 451-401 North.

—ECONOMIC TYRE CO. New clearance lines, carriage paid, approval against remittance.

—ECONOMIC. 28 by 3 Kempshall heavy anti-skid, 27s. 6d., listed 57s. 6d.; Avon 3-rib, 39s. 6d., listed 67s. 6d.; A Wm, 42s. 6d., for American rims.

—ECONOMIC. 650 by 65, 3-rib, Dreadnoughts, 35s.; Kempshall anti-skid, 45s., listed 53s. 6d., very heavy.

—ECONOMIC. 26 by 2½ covers, wired, 7s. 6d.; Kempshall anti-skid, 19s. 6d.; non-skid, 27s. 6d.; 26 by 3 anti-skid, 25s.

—ECONOMIC TYRE CO. 137a Lewisham High Rd., New Cross, S.E. 14. Phone, New Cross 1393. 451-356

WANTED.

—SEND your motorcycle to Palmer's Garage, Tooting, Wimbledon Station; cash offer will be telegraphed immediately on receipt of machine. Machine can be included in fortnightly auction without charge if offer not accepted. Reserve price may be fixed. Sole address, Palmer's Garage and Auction Rooms, 199-199 High St., Tooting. 222-715

—100 MOTORCYCLES wanted, spot cash paid; bring or send. Palmer's Garage, Tooting. 222-919

—WANTED, motorcycles, spot cash. Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 467-4128

—WANTED, 1916 Harley or Enfield combination, privately owned, cash waiting, no fancy prices or dealers. Motor Sales Co., 9 Sherwood St., W. 1. 457-553

—WANTED, good up-to-date second hand accessories, state particulars and prices. Service Co., 292 High Holborn, London, W.C. 1. 222-316

—WE are buyers of motorcycles of the following makes not earlier than 1914: A.R.C., A.J.S., Brough, Enfield, Harley-Davidson, Henderson, Indian, Norton, Sunbeam, Triumph, Zenith, and other good makes. Write, giving particulars and prices, Servico Co., 292 High Holborn, W.C. 1. 222-715

—WANTED, sliding dog for 1½ single countershaft gear. Burnham, Tailor, Cranbrook, Kent. 451-4771

—WANTED, complete set of rainproof overalls, must be cheap for cash. 15 Sedgwick Rd., Leyton, E. 10. 451-4777

—ANY recent make of motor purchased for cash. 4a Bridle Lane, Soho, London, W. 1. 451-318

—WANTED, 1915-16 New Imperial, 2½, 3 speeds, good cash price paid. Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 451-4794

—WANTED, Humber Roe gear or planet pinions only. 20 Forrest St., Latchford. 451-4783

—WANTED, motorcycle or combination, cheap for cash. Box No. 3665, c/o "Motor Cycling." 451-4777

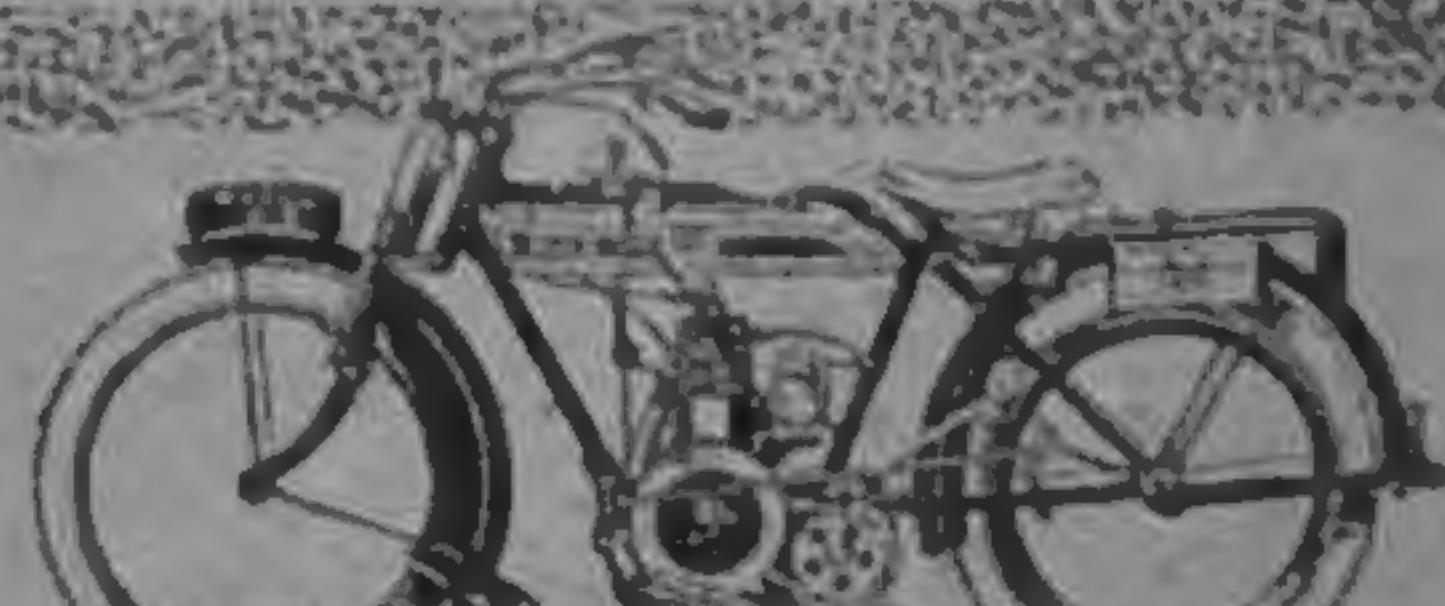
—WANTED, 1914 or 1915 Douglas, also 1916 2-speed Levis. Fullest particulars and best cash price to Mebes and Mebes, 154-6 Gt. Portland St., W. 1. Tel., 3126 Mayfair. 451-403

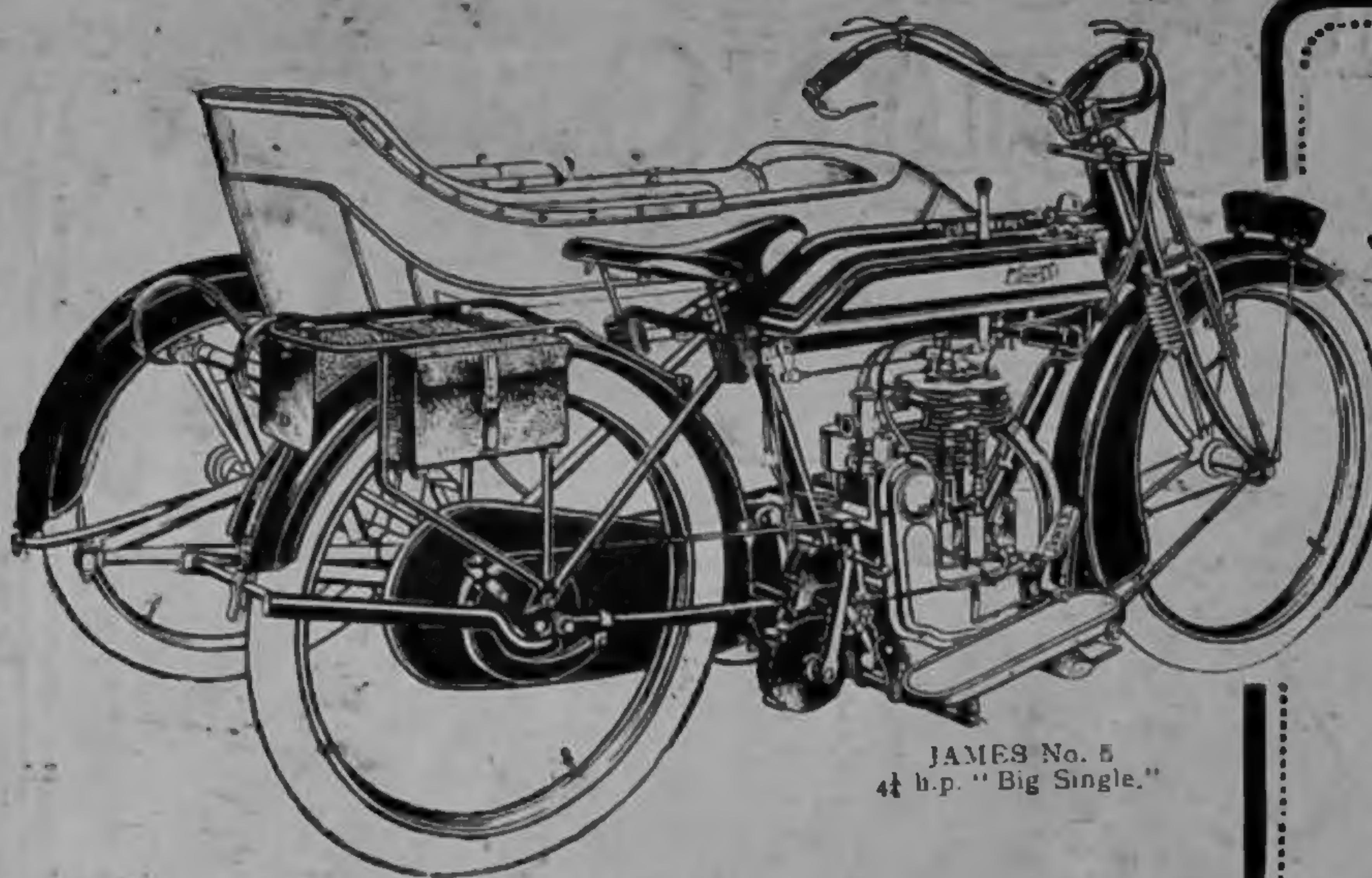
Radco
THE KING OF LIGHTWEIGHTS.

The Example of Perfection
IN LIGHTWEIGHT DESIGN.

Write for Illustrated Booklet showing Latest Improvements.

E. A. RADNALL & CO.,
DARTMOUTH ST., BIRMINGHAM.





JAMES No. 5
4½ h.p. "Big Single."

A note of special interest to intending Buyers

Although mainly producing motorcycles for the BRITISH AND ALLIED GOVERNMENTS, we still have a limited number available for civilian use, and orders are being dealt with in strict rotation. Therefore—get your name enrolled on our "Earliest Delivery List" at once.

The JAMES CYCLE CO., Ltd., Greet, B'HAM.
London Depot: 22, Holb. Via., E.C.1. B'ham Depot: Broad St. Corner.

As a keen solo and sidecar rider you doubtless have noted the rise of the "Big Single" type—chiefly through the efficiency of the JAMES—the original all-enclosed chain-driven mount. Hence you will be wise to choose it for your next machine. It's our

No. 6-1½ h.p. "Big Single,"
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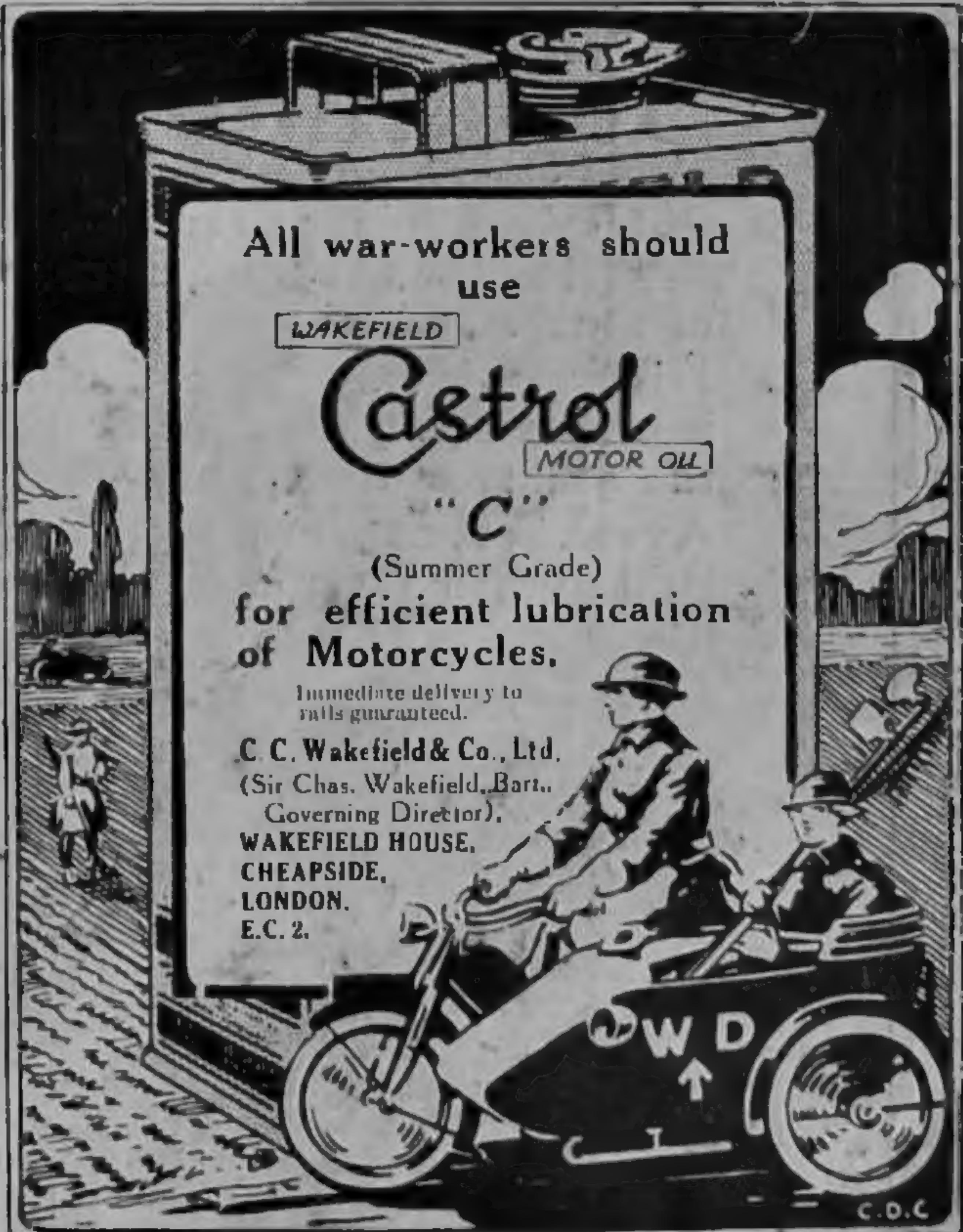
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